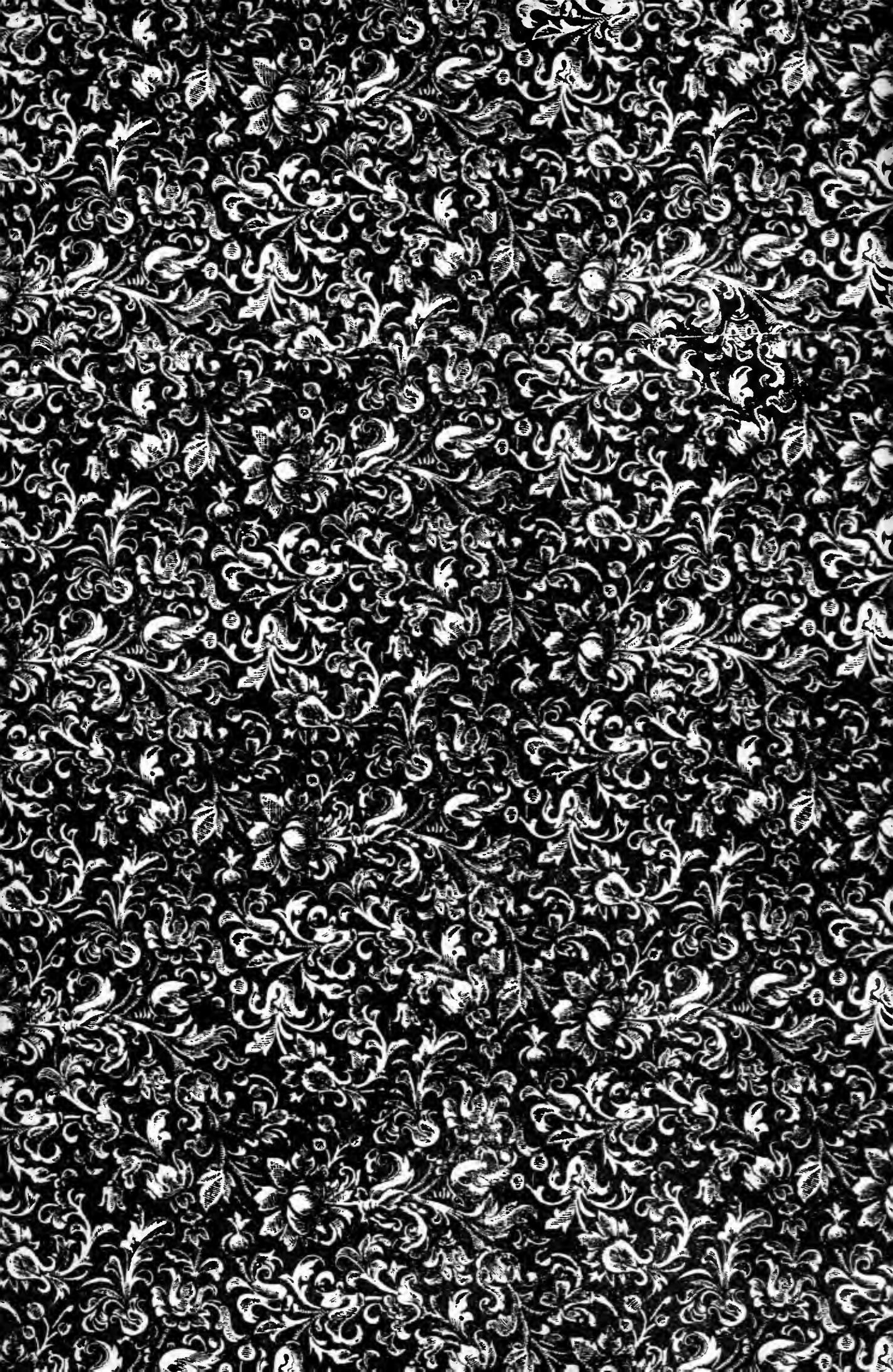


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EIGHTH ANNUAL REPORT

—OF THE—

Illinois State Bee-Keepers' Association

Organized Feb. 26, 1891.

—AT—

SPRINGFIELD, ILL.

COMPILED BY
JAMES A. STONE, SECRETARY,
R. R. 4, Springfield, Ill.

Springfield, Ill.
Illinois State Register Print,
1909.



ILLINOIS STATE CAPITOL BUILDING AT SPRINGFIELD.

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LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
R. R. 4, SPRINGFIELD, ILL., March 1, 1909. }

*To his Excellency, Charles S. Deneen, Governor of the State
of Illinois:*

SIR: I have the honor to transmit herewith the Eighth
Annual Report of the Illinois State Bee-Keepers' Association.
Respectfully submitted,

JAMES A. STONE, *Secretary.*

414430

OFFICERS AND MEMBERS

—OF THE—

ILLINOIS STATE BEE-KEEPERS' ASSOCIATION

FOR 1909.



OFFICERS

J. Q. SMITH President
 And State Foul Brood Inspector, Lincoln.

VICE-PRESIDENTS.

1st—A. L. KILDOW, Putnam
 2d—W. B. MOORE, Altona
 3d—DR. C. C. MILLER, Marengo
 4th—W. H. HYDE, New Canton
 5th—L. WERNER, Edwardsville
 JAMES A. STONE, Secretary
 CHAS. BECKER, Treasurer
 Pleasant Plains

LIST OF MEMBERS

— OF THE —

Illinois State Bee-Keepers' Association

FOR 1909

(Where no State is given "Illinois" is understood.)

NAME AND ADDRESS.	No. of Colonies.....	Pounds of Comb Honey in 1908.....	Pounds of extracted Honey in 1908.....
Almond Bros.—Libertyville	10	600	....
Anderson, J. L.—Harvard.....	115	5875	350
Andrews, T. P.—Farina	94	....	4700
Augenstein, A. A.—R. 1, Dakota.....	19	600	400
Bartrum, Mrs. H. W.—Plano.....No report	...	....	....
Baxter, E. J.—Nauvoo	180	....	20000
Becker, Chas.—Pleasant Plains	82	1200	3000
Benjamin, W. W. Metropolis.....	12	150	100
Bercaw, Geo. W.—Eltoro, Cal.	250	....	....
Bevier, M.—Bradford	52	3000	100
Bishop, W. W.—Virginia, Ill.....	10	350	....
Black, S. H.—Good Hope.....No report	...	....	....
Black, S. N.—Clayton	18	600	....
Bolt, R.—Fulton	40	4100	200
Bowen, J. W.—Jacksonville.....No report	...	....	....
Brokaw, Lionel—Summerhill	35	100	100
Bronell, L. F.—Plano	6	500	....
Brown, E. W.—Norton Park.....	25	100	2000
Caldwell, C. S.—P. M. Elvaston.....	60	1400	6400
Carrico, John G.—Barnett.....	25	500	....
Cave, Geo. W.—Kirkwood.....	160	7000	5000
Cherry, Thos. M.—Quincy .....	...	....	....
Clawson, W. A.—Assumption .....	...	....	....
Coffman, D. H.—Hamilton	70	....	6600
Conover, W. F.—Lima .....	...	....	....
Coppin, Aaron—Wenona .....	...	....	....
Cremers, L. H.—East Dubuque.....	148	225	9600
Crim, S. T.—Dawson.....	53	3400	60
Crosley, E. G.—Farina	55	....	3200
Crotzer, S. A.—Lena	56	1600	....
Deem, B. L.—Colona	30	500	1500
Dubold, A. J.—Seneca	25	490	1360
Dollinger, Henry—Lockport	50	4200	1200
Donges, G. F.—Durand	40	300	5300
Dowdy, Jno. S.—Atlanta .....	...	....	....
Drorak, John, Jr—Algonquin	50	1060	900

NAME AND ADDRESS.

	No. of Colonies.....	Pounds of Comb Honey in 1908.....	Pounds of Extracted Honey in 1908.....
Earle, Mrs. C. A.—DesPlaines.....	14	400	600
Earnest, David P.—East Alton.....	...	....	....
Eidmann, E. C.—Belleville	40	50	1200
Enigenberg, J.—Oakglen	50	From 25 1700	From 25 4140
Entsminger, A.—Taylorville	98	4000	2000
Eve, George—Minonk	19	1300	....
Falbe, Christ—Belleville	82	....	8200
Finger, C. A.—Marissa	24	....	1080
Flanagan, E. T.—Belleville	100	200	5500
Frank, J. C.—Davis	237	500	15000
Gandy, W. C.—Ritchey .....	...	....	....
Geissag, Alfred—Greenville	60	....	10500
Glasser, Wm.—Dakota .....	...	....	....
Grant, W. W.—Marion	14	68	150
Gray, W. H.—Chillicothe	70	2500	1200
Group, Jno F.—Franklin Grove.....	13	580	....
Haines, C. A.—East St. Louis.....	26	....	....
Hall, B. D.—Royal	10	1000	800
Hamilton, Ray A.—Donovan	35	2100	....
Hansel, Charlie—Minooka	20	1400	....
Hartman, Fred E.—Troy .....	...	....	No report
Hartman, Rev. T. F.—Rochester.....	...	....	....
Hassler, J. H.—Princeton	30	3410	....
Haych, Barnard—Quincy .....	...	....	....
Hazelwood, F.—Belvidere	25	1000	....
Heinze, Herman—Edwardsville	30	400	....
Heise, Paul—Warsaw	30	800	100
Hettel, Mathias—Marine	104	2100	2100
Hill, H. D.—Lima	140	4500	200
Hinderer, Frank—Frederick	46	5300	....
Hitch, Rev. H. F.—Pineville, La.....	36	....	450
Hix, Chas. M.—Hampshire	2	24	....
Holdewer, J. D.—Carlyle	95	3768	900
Holekamp, R. A.—St. Louis, Mo.....	200	200	15000
Homan, W. A.—Quincy	55	2500	300
Honack, Chas.—Streator	3	....	250
Hutt, Joseph G.—Peoria	18	1800	....
Hyde, W. H.—New Canton.....	...	....	....
Johnson, J. P.—Elburn .....	...	....	....
Jones, M. A.—Atwater	29	....	2500
Joyce, Michael—Reddick	8	300	....
Kendall, Frank R.—Byron	37	1200	720
Kennedy, Miss L. C.—Curran.....	72	3700	....
Kildow, A. L.—Putnam	223	14500	1000
Kuczynski, John F.—Oglesby .....	...	....	....
Kurr, J. T.—Louisville, Ill.....	35	900	....
Lange, J. W. —Thawville.....	24	1000	250
Laxton, J. G.—Lyndon .....	...	....	....
Lind, M. H.—Baders	130	1600	1800
Longwell, B. R.—Rochelle	68	4500	150
Mahler, Peter—Utica	90	8000	....

NAME AND ADDRESS.

NAME AND ADDRESS.	No. of Colonies.....	Pounds of Comb Honey in 1908.....	Pounds of Extracted Honey in 1908.....
May, Fred H.—Meredosia	105	750	3000
Maynard, W. H.—Decatur .....	...	...	...
Meise, F. A.—Coatsburg	90	100	2000
Menkhausen, Louis T.—Belleville	40	500	500
Michael, S. P.—Spring Valley .....	...	...	...
Miller, Dr. C. C.—Marengo.....	160	17857	...
Moore, W. B.—Altona	40	3500	500
Mottaz, A.—Utica	75	3600	8000
Muchleip, H.—Apple River	90	3200	1500
Mullin, O. S.—Rock Island.....	...	...	...
Mundoff, C. H.—Kirkwood .....	...	...	...
McCullough, Jno. T.—Centralia .....	...	...	...
McElfresh, Wm.—P. O., Springfield.....	12	300	...
McKown, C. W.—Gilson	107	1950	5200
McLeod, D. C.—Pana	78	2200	300
Ness, L. L.—Morris	175	13000	1800
Newcomer, Sam M.—Polo.....	70	1000	1500
Norberg, Peter J.—Spring Valley	175	2000	1600
Null, Wm. D.—Prairieville, Ala.....	62	...	5000
Nydegger, John—Danville	110	...	6000
Oakes, Lannes P.—Joppa	19	400	...
Ostermeier, John—Cornland .....	...	...	...
Paul, W. H.—Edwardsville .....	...	...	...
Payne, John W.—Georgetown	16	600	400
Pepinger, W. A.—Lincoln .....	...	...	...
Peterson, F. E.—Edelstein .....	...	...	...
Picaman, Gus.—Litchfield .....	...	...	...
Pickels, M. A.—Lomax	60	600	550
Plunkett, J. M.—Palestine	20	140	...
Poindexter, James—Bloomington .....	...	...	...
Pyles, I. E.—Putnam .....	...	...	...
Raftery, J. T.—Hadley Station .....	...	...	...
Resser, N. W.—Geneseo	141	7300	1300
Ricker, T. R.—Cortland .....	...	...	...
Rigg, R. T.—Auburn.....	40	2000	...
Riley, W.—Breeds .....	...	...	...
Roat, Austin—Kankakee	9	2000	...
Robbins, Danl. E.—Payson	45	400	2000
Sauer, Geo. L.—Polo	108	...	...
Sauer, John—Springfield .....	...	...	...
Seastream, George—Pawnee	55	500	1500
Secor, W. G.—Greenfield	57	384	1500
Seibold, Jacob—Homer	16	700	...
Shawver, Oscar—Casey	20	600	...
Shroutz, Mack—Momence	25	800	...
Shupe, Frank—Mazon	80	7000	300
Simpson, Wm—Meyer .....	...	...	...
Slack, Geo. B.—Mapleton	45	3408	200
Smith, J. O.—Lincoln .....	...	...	...
Snell, F. A.—Milledgeville	100	250	5000
Snyder, Thos M.—Lima .....	...	...	...
Southwick, Dr. Geo. E.—Glenarm.....	110	6000	...

NAME AND ADDRESS.

NAME AND ADDRESS.	No. of Colonies.....	Pounds of Comb Honey in 1908.....	Pounds of Extracted Honey in 1908.....
Spacklen, A. W.—Cowden.....	80	400	300
Stone, Jas. A.—Springfield	39	500	2000
Turner, W. P.—Peoria Heights.....	48	4286	530
Tyler, Fred—San Jose	20	200	30
Ulrich, G. E.—Campus	10	700	....
Vogel, Henry—Galena	70	3000	200
Wagner, F. M.—Quincy	60	500	....
Walker, Albert—Petersburg	31	656	800
Walsh, James—Woodstock	25	1500	....
Werner, Louis—Edwardsville	150	1200	400
Whitmore, Dr. N. P.—Gardner.....	11	527	666
Widicus, Daniel—St. Jacob	28	250	750
Yoos, Geo. F.—Central City.....	100	2500	500
York, Geo. W.—Chicago .....	...	....	....
Young, A. O. K.—Girard.....	50	925	800
Zachgo, Hugo—Danforth	70	3500	400
Zeller, Mrs. Caroline—Peoria	35	500	550
Zoll, C.—Vermont	36	500	....

LIST OF MEMBERS COMING IN A BODY PER THE CHICAGO
NORTHWESTERN ASSOCIATION.

Arnd, H. M.—Chicago .....	...	....	....
Ahlers, H. C.—West Bend, Wis.....	...	....	....
Baldrige, M. M.—St. Charles.....	...	....	....
Baldwin, E. W.—DeKalb .....	...	....	....
Beardsley, E. H.—Chicago .....	...	....	....
Barkemeyer, B. D.—Oak Park.....	...	....	....
Benson, Ada—Chicago .....	...	....	....
Bodenschatz, Adam—Lemont	260	5920	22500
Bohrer, Dr. G.—Lyons, Kans.....	...	925	800
Blume, W. B.—Chicago .....	...	....	....
Bull, John C.—Valparaiso, Ind.....	...	....	....
Candler, Miss M.—Cassville, Wis.....	...	....	....
Chapman, W. B.—Arlington Heights .....	...	....	....
Dadant, C. P.—Hamilton .....	...	....	....
Duff, Peter N.—Chicago .....	...	....	....
Falconer, W. W.—Chicago .....	...	....	....
Furgeson, L. R.—Harvey .....	...	....	....
Furgeson, Mrs. L. R.—Harvey.....	...	....	....
Fluegg, Theodore—Bensenville .....	...	....	....
Frank, Jno. C.—Dodge City, Kans.....	...	....	....
Glassner, Mrs. J. J.—Chicago.....	...	....	....
Grabbe, F.—Libertyville .....	...	....	....
Hanson, Julius—Aurora .....	...	....	....
Hintz, Aug. J.—Lemont .....	...	....	....
Holbrook, R. B.—Chicago .....	...	....	....
Horstman, Wm. H.—Chicago .....	...	....	....
Jones, Geo. W.—West Bend, Wis.....	...	....	....
Kanneberg, C. F.—Oak Park.....	...	....	....
Kennicot, E. E.—Glenview	14	600	30

NAME AND ADDRESS.	No. of Colonies.....	Pounds of Comb Honey in 1908.....	Pounds of Extracted Honey in 1908.....
Kimmez, F. L.—Morgan Park.....
Kluck, N. A.—McConnell	56	1000	2000
Kneser, John—Barrington
Longsdon, W. D.—Stillman Valley.....
Lyman, W. C.—Downers Grove.....	48	500	2000
Macklin, Chas. G.—Morrison	100	3600	500
McAllister, G. H.—Chicago
Moore, Herman F.—Park Ridge.....
Mears, W. H.—Chicago
Offner, Fred—Monee
Owen, Chas—Austin Station, Chicago.....
Reynolds, W. G.—Chicago (Ogden Avenue).....
Ruel, J. G.—Monroe Avenue, Chicago.....
Russen, Gottlieb—N. Leavitt, Chicago.....
Saxe, A. J.—Chicago
Stanley, Arthur—Dixon
Stewart, W. H. H.—Emerson.....
Switzer, Saml.—St Charles	55	500	2000
Taylor, R. L.—LaPier, Mich.....
Taylor, C. E.—Custer Park.....	15	550	...
Todd, F. D.—Victoria, B. C.....
Watts, W. H.—Ross, Ind.....
Walker, Byron—Clyde
Weckerle, Anna—West Pullman
Wheeler, J. C.—Oak Park.....
Whitney, W. M.—Evanston	39	4000	1500
Weigand, Adam—Chicago
Wilcox, F.—Manston, Wis
Wilson, Miss Emma—Marengo.....
Winter, I. V.—North Aurora.....

LIST OF MEMBERS COMING IN A BODY PER THE NORTHERN ILLINOIS ASSOCIATION.

Anderson, J. L.—Harvard .....	...	...	...
Beidler, W. H.—Freeport	10	300	...
Hitt, Samuel—Elizabeth .....	...	...	...
Jackson, Jno A.—Winnebago .....	...	...	...
Kennedy, B.—Cherry Valley	25	600	...
Kluck, N. A.—Lena .....	...	...	...
Lee, Arthur—Rockton .....	...	...	...
Lee, H. W.—Pecatonica .....	...	...	...
Martin, M. M.—Caledonia .....	...	...	...
Mason, Joseph—Fairdale .....	...	...	...
McBarnes, W. H.—Rockford .....	...	...	...
McCartney, Geo. R.—Rockford .....	...	...	...
Piercfield, Wm.—Byron .....	...	...	...
Prentice, W. L.—Stillman Valley.....	...	...	...
Taylor, O.—Rockford .....	...	...	...
Thompson, A. L.—Rockford	9	600	...
Whitney, Byron—Byron .....	...	...	...
Woolsey, Geo. A.—Rockford.....	...	...	...

EIGHTH ANNUAL REPORT OF THE

Through the one hundred and twenty-eight members who reported to the Secretary when they sent in their fees, we get the following:

No. of Colonies of Bees.....	7,903
No. of pounds of Comb Honey in 1908.....	235,328
No. of pounds of Extracted Honey in 1908.....	236,101
Average No. of Colonies per member.....	61.74
Average No. pounds Comb Honey per member.....	1,838
Average No. pounds of Extracted Honey per member.....	1,844

Value of Comb Honey for 1908 at 15c.....	\$35,298.20
Value of Extracted Honey for 1908 at 12c.....	28,332.12
Total value of Honey reported.....	\$63,630.32

If the same ratio would hold good with the 34,932 bee-keepers in the state, the result would be as follows:

No. of Colonies of Bees.....	2,130,852
No. pounds Comb Honey.....	68,245,016
No. pounds Extracted Honey.....	68,414,608
Value of Comb Honey at 15c per pound.....	\$10,236,752.40
Value of Extracted Honey at 12c per pound.....	8,209,752.96
Total value Comb and Extracted Honey.....	\$18,446,505.36

Formation of the Illinois State Bee-Keepers' Association.

Springfield Ill., Feb. 26, 1891.

The Capitol Bee-Keepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State Association, and there being present bee-keepers from different parts of the state, by motion, a recess was taken in order to form such an Association.

P. J. England was chosen temporary chairman, and C. E. Yocum temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a committee on constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State Association, and stated that it was his opinion that the bee-keepers should have a liberal appropriation for a State Apiarian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 P. M. prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same, which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word "shall" for "may" in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word "ladies" and all that followed of the same section, which motion led to further discussion and motion finally prevailed.

Section 2, Article II., relating to a quorum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V. by adding the words "Thirty days' notice having been given to each member." Prevailed.

Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution, page 8.

J. A. Stone moved that the Chair appoint a nominating committee of three on permanent organization. Prevailed.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:

For President—P. J. England, Fancy Prairie.

For Vice Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the committee on nominations. The motion prevailed, and the officers as named by the committee were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, Editor American Bee Journal, of Chicago, be made the first honorary member of the Association. Prevailed.

At this point Col. Chas. F. Mills said, "Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his action to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.
Hon. J. M. Hambaugh, Spring.
Hon. J. S. Lyman, Farmingdale.
C. P. Dadant, Hamilton.
Chas. Dadant, Hamilton.
A. N. Draper, Upper Alton.
S. N. Black, Clayton.
Aaron Coppin, Wenona.
Geo. F. Robbins, Mechanicsburg.
J. W. Yocum, Williamsville.
Thos. S. Wallace, Clayton.
A. J. England, Fancy Prairie.
P. J. England, Fancy Prairie.
C. E. Yocum, Sherman.
Jas. A. Stone, Bradfordton.

FIRST HONORARY MEMBER.

Thos. G. Newman, Editor American Bee Journal, Chicago.

State of Illinois—Department of State

ISAAC N. PEARSON, Secretary of State

To all to whom these Presents shall come—GREETING:

Whereas, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Bee-keepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

Now, Therefore, I, Isaac N. Pearson, Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Bee-Keepers' Association, is a legally organized corporation under the laws of the State.

In Testimony Whereof, I hereunto set my hand and cause to be affixed the great seal of State.

Done at the City of Springfield, this 27th day of February in the year of our Lord one thousand eight hundred and ninety-one, and the Independence of the United States the one hundred and fifteenth.

I. N. PEARSON,
Secretary of State.

STATE OF ILLINOIS, } ss.
County of Sangamon. }

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled, "An Act Concerning Corporations," approved April

18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Bee-Keepers' Association.

2. The object for which it is formed is, to promote the general interests of the pursuit of bee-culture.

3. The management of the afore-said Association shall be vested in a board of three Directors who are to be elected annually.

4. The following persons are hereby selected as the Directors, to control and manage said corporation for the first year of its corporate existence, viz.: Perry J. England, Jas. A. Stone and Albert N. Draper.

5. The location is in Springfield, in the County of Sangamon, State of Illinois. [Signed,]

Perry J. England,
Jas. A. Stone,
Albert N. Draper.

STATE OF ILLINOIS, } ss.
Sangamon County; }

I, S. Mendenhall, a notary public in and for the County and State afore-said, do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the foregoing certificate and severally acknowledged that they had executed the same for the purposes therein set forth.

In witness whereof, I have hereunto set my hand and seal the day and year above written.

[Seal] S. Mendenhall,
Notary Public.

CONSTITUTION AND BY-LAWS

—OF THE—

Illinois State Bee-Keepers' Association

CONSTITUTION

Adopted Feb. 26, 1901.

ARTICLE I.—Name.

This organization shall be known as The Illinois State Bee-Keepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II.—Object.

Its object shall be to promote the general interests of the pursuit of bee-culture.

ARTICLE III.—Membership.

Section 1. Any person interested in Apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar (\$1.00). (Amendment adopted at annual meeting, November, 1905): And any affiliating Association, as a body, may become members on the payment of an aggregate fee of twenty-five cents (25c) per member.

Sec. 2. Any persons may become hon-

orary members by receiving a majority vote at any regular meeting.

ARTICLE IV.—Officers.

Section 1. The officers of this Association shall be President, Vice-President, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

Sec. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

Sec. 3. Vacancies in office — by death, resignation and otherwise — shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V.—Amendments.

This Constitution shall be amended at any annual meeting by a two-thirds vote of all the members present — thirty days' notice having been given to each member of the Association.

BY-LAWS

ARTICLE I.

The officers of the Association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this Association; to call for all reports of officers and committees; to

put to vote all motions regularly seconded, to count the vote at all elections, and declare the results; to decide upon all questions of order; and to deliver an address at each annual meeting.

ARTICLE III.

The Vice-Presidents shall be numbered respectively, First, Second, Third, Fourth and Fifth, and it shall be the

duty of one of them in his respective order to preside in the absence of the President.

ARTICLE IV.

Section 1. It shall be the duty of the Secretary to report all proceedings of the Association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the Association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the Association; to cause the Constitution and By-Laws to be printed in appropriate form, and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the Association in the leading papers of the State and in the bee journals at least four weeks prior to the time of such meeting.

Sec. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the As-

sociation, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

The meeting of the Association shall be, as far as practicable, governed by the following order of business:

- Call to order.
- Reading minutes of last meeting.
- President's address.
- Secretary's report.
- Treasurer's report.
- Reports of committees.
- Unfinished business.
- Reception of members and collection.
- Miscellaneous business.
- Election and installation of officers.
- Discussion.
- Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. Yocom,
Aaron Coppin,
Geo. F. Robbins.

(Bills offered in the 46th General Assembly.)

Bee-Keepers' Association

§ 1. For expenses of annual meetings, per annum, \$1,000; officers to receive no salary.

§ 2. How drawn.

§ 3. Duty of Treasurer of Association.

A BILL

For an act making an appropriation for the Illinois State Bee-Keepers' Ass'n.

Whereas, The members of the Illinois State Bee-Keepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the bee-keepers of the State; and,

Whereas, The importance of the industry to the farmers and fruit-growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning bee-keeping, therefore to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote the industry in Illinois:

Section 1. Be it enacted by the People of the State of Illinois represented in the General Assembly: That there be and is hereby appropriated for the use of the Illinois State Bee-Keepers' Association the sum of one thousand dollars (\$1,000) per annum for the years 1909 and 1910. For the purpose of advancing the growth and developing the interests of the bee-keepers of Illinois, said sum to be expended under the direction of the Illinois State

Bee-Keepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Bee-Keepers' Association shall be entitled to receive any money compensation whatever for any services rendered for the same, out of this fund.

Sec. 2. That on the order of the President, countersigned by the Secretary of the Illinois State Bee-Keepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois State Bee-Keepers' Association for the sum herein appropriated.

Sec. 3. It shall be the duty of the treasurer of the Illinois State Bee-Keepers' Association to pay out of said appropriation on itemized and receipted vouchers such sums as may be authorized by vote of said organization on the order of the president, countersigned by the secretary, and make annual report to the Governor of all such expenditures, as provided by law.

A BILL

For an act providing for the appointment of a State Inspector of Apiaries, and prescribing his powers and duties.

Whereas, The disease known as foul brood exists to a very considerable extent in various portions of this State, which if left to itself will soon exterminate the honey bees; and,

Whereas, The work done by an individual bee-keeper or by a State Inspector is useless so long as the official is not given authority to inspect and if need be destroy the disease when found; and

Whereas, There is a great loss to the bee-keepers and fruit-growers of the State each year by the devastating ravages of foul brood:

Section 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly: That the Governor shall appoint a State Inspector of Apiaries, who shall hold his office for the term of two years and until his successor is appointed and qualified.

Sec. 2. Said Inspector shall, when notified of the existence of the disease known as foul brood among apiaries, examine all such as are so reported and all others in the same locality and ascertain whether or not such disease exists, and if satisfied of its existence, shall give the owner or the person who has the care of such apiaries full instructions as to the manner of treating them. In case the owner of a diseased apiary shall refuse to treat his bees or allow them to be treated as directed by the said Inspector, then the said Inspector may burn all the

colonies and all the combs necessary to prevent the spread of the disease, provided, said Inspector shall, before burning, give one day's notice to the owner or other person who has the care of the colonies of bees and comb, that in his judgment should be burned.

Sec. 3. The Inspector shall, on or before the second Monday of December in each calendar year, make a report to the Governor and also to the Illinois State Bee-Keepers' Association, stating the number of apiaries visited, the number of those diseased and treated, the number of colonies of bees destroyed, and the expense incurred in the performance of his duties. Said Inspector shall receive four dollars for each day actually and necessarily spent in the performance of his duties and be reimbursed for the money expended by him in defraying his expenses, out of the appropriation made to the Illinois State Bee-Keepers' Association, provided, that the total expenditure for such purposes shall not exceed six hundred dollars per year.

Sec. 4. Any owner of a diseased apiary or appliances taken therefrom, who shall sell, barter or give away any such apiary, appliance, or bees from such apiary, expose other bees to the danger of contracting such disease, or refuse to allow the Inspector of Apiaries to inspect such apiary, or appliances, shall be fined not less than fifty dollars nor more than one hundred dollars.

No.

CERTIFICATE OF ILLINOIS STATE INSPECTOR OF APIARIES.

Date190....

I have this day inspected the apiary of:—

Mr.

P. O.

No. of colonies in apiary.

Last winter.....	{	In cellar.....	Loss.....
		Outside.....	Loss.....

190....Honey.....	{	Lbs. Comb.....
		Lbs. Extracted.....

No. colonies apparently healthy.....

No. colonies diseased.....

Name of disease.....

Date bees to be treated.....

No. colonies or hives to be burned.....

Subscriber for.....

Remarks.....

.....

.....

Foul Brood Inspector of Illinois.

Code of Rules and Standards for Grading Apiarian Exhibits at Fairs, as Adopted by Illinois State Bee-Keepers' Association.

COMB HONEY.

Rule 1. Comb honey shall be marked on a scale of 100, as follows:

Quantity	40
Quality	40
Style of display.....	20

Rule 2. Points of quality should be:

Variety	5
Clearness of capping.....	10
Completeness of capping.....	5
Completeness of filling.....	5
Straightness of comb.....	5
Uniformity	5
Style of section.....	5

Remarks, 1. By variety is meant different kinds, with regard to the sources from which the honey is gathered, which adds much interest to an exhibit.

2. By clearness of capping is meant freedom from travel stain and a water soaked appearance. This point is marked a little high because it is a most important one. There is no better test of the quality of comb honey than the appearance of the cappings. If honey is taken off at the proper time and cared for as it should be, so as to preserve its original clear color, body and flavor will take care of themselves, for excellence in the last two points always accompanies excellence in the first. Clover and basswood honey should be white; heartsease, a dull white tinged with yellow; and Spanish needle, a bright yellow.

3. By uniformity is meant closeness of resemblance in the sections composing the exhibit.

4. By style is meant neatness of the sections, freedom from propolis, etc. Under this head may also be considered the size of the section. The $4\frac{1}{4} \times 4\frac{1}{4}$ being the standard, should take the preference over all others, and $1\frac{1}{2}$ to 2 inches in width over narrow ones.

5. Honey so arranged as to show every section should score the highest in style of display, and everything that may add to the tastiness and attractiveness of an exhibit should be considered.

EXTRACTED HONEY.

Rule 1. Extracted honey should be marked on a scale of 100, as follows:

Quantity	40
Quality	45
Style of display	15

Rule 2. The points of quality should be:

Variety	10
Clearness of color.....	5
Body	5
Flavor	5
Style of package.....	10
Variety of package	5
Finish	5

Remarks, 1. Light clover honey pouring out of a vessel is a very light straw color; Spanish needle, a golden hue; and dark clover honey a dull amber.

2. Style of package is rated a little high, not only because in that consists the principal beauty of an exhibit of extracted honey, but also because it involves the best package for marketing. We want to show honey in the best shape for the retail trade, and that in this case means the most attractive style for exhibition. Glass packages should be given the preference over tin; flint glass over green; and smaller vessels over larger, provided the latter run over one or two pounds.

3. By variety of package is meant chiefly different sizes; but small pails for retailing, and in addition, cans or kegs (not too large) for wholesaling, may be considered. In the former case, pails painted in assorted colors and lettered "Pure Honey," should be given the preference.

4. By finish is meant capping, labeling, etc.

5. Less depends upon the manner of arranging an exhibit of extracted than of comb honey, and for that reason, as well as to give a higher number of points to style of package, a smaller scale is allowed for style of display.

SAMPLES OF COMB AND EXTRACTED HONEY.

Rule 1. Single cases of comb honey, entered as such for separate premiums, should be judged by substantially the same rules as those given for a display of comb honey, and samples of extracted by those governing displays of extracted honey.

Rule 2. Samples of comb or extracted honey, as above, may be considered as part of the general display in their respective departments.

GRANULATED HONEY.

Rule 1. Candied or granulated honey should be judged by the rules for extracted honey, except as below.

Rule 2. The points of quality should be:

Variety	10
Fineness of grain.....	5
Color	5
Flavor	5
Style of package.....	10
Variety of package.....	5
Finish	5

Rule 3. An exhibit of granulated honey may be entered or considered as part of a display of extracted honey.

NUCLEI OF BEES.

Rule. Bees in observation hives should be marked on a scale of 100, as follows:

Color and markings.....	30
Size of bees	30
Brood	10
Queen	10
Quietness	5
Style of comb	5
Style of hive	10

Remarks, 1. Bees should be exhibited only in the form of single frame nuclei, in hives or cages with glass sides.

2. Italian bees should show three or more bands ranging from leather color to golden or light yellow.

3. The markings of other races should be those claimed for those races in their purity.

4. A nucleus from which the queen is omitted should score zero on that point.

5. The largest quantity of brood in all stages or nearest to that should score the highest in that respect.

6. The straightest, smoothest and most complete comb, with the most honey consistent with the most brood, should score the highest in that respect.

7. That hive which is neatest and best made and shows the bees, etc., to the best advantage should score the highest.

QUEEN BEES.

Rule. Queen bees in cages should be marked on a scale of 100, as follows:

Quantity	40
Quality and variety.....	40
Style of caging and display.....	20

Remarks, 1. The best in quality consistent with variety should score the highest. A preponderance of Italian queens should outweigh a preponderance of black ones, or perhaps of any other race or strain; but sample queens of any or all varieties should be duly considered. Under the head of quality should also be considered the attendant bees. There should be about a dozen with each queen.

2. Neatness and finish of cages should receive due consideration, but the principal points in style are to make and arrange the cages so as to show the inmates to the best advantage.

BEESWAX.

Rule. Beeswax should be marked on a scale of 100, as follows:

Quantity	40
Quality	40
Style of display.....	20

Remarks, 1. Pale clear yellow specimens should score the highest, and the darker grades should come next in order.

2. By style is meant chiefly the forms in which the wax is molded and put up for exhibition. Thin cakes or small pieces are more desirable in the retail trade than larger ones. Some attention may be given to novelty and variety.

Foul Brood and Other Diseases of Bees

(Republished by permission of N. E. France, Foul Brood Inspector of Wisconsin.)

Foul brood—*bacillus alvei*—is a fatal and contagious disease among bees, dreaded most of all by bee-keepers. The germs of disease are either given to the young larval bee in its food when it hatches from the egg of the queen-bee, or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker-bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the *British Bee Journal*, recently wrote: "The only visible hindrance to the rapid expansion of the bee industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make bee-keeping a hazardous occupation."

Canada's foul brood inspector, in 1890 to 1892, reported 2,395 cases, and in a later report for 1893 to 1898, that 49 per cent of the colonies inspected were diseased. Cuba is one of the greatest honey-producing countries, and was lately reported to me by a Wisconsin bee-keeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known whole apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I, myself, took in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apiary? Dead from foul brood." Cuba, in 1901, exported 4,795,600 pounds of honey, and 1,022,897 pounds of bees-wax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin I know of several quite large piles of empty hives, where also many other apiaries where said disease had gotten a strong foothold.

By the kindness of the Wisconsin bee-keepers, and in most cases by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other States and countries, so we may expect some new cases to develop until all the States shall enact such laws as will prevent further spread of the same. Arizona, New York (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897), and Michigan (1901), have State inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease, is considered the best, and many other States are now making efforts to secure a like law.

There are several experimental apiaries in Canada under control of the Ontario Agricultural College, also a few in the United States, especially in Colorado, that have done great work for the bee-keeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Bee-Keepers' Association has asked that an experimental apiary might be had on the Wisconsin Experimental farm, but at present there are so many departments asking for aid that I fear it may be some time before bee-culture will be taken up.

Causes of Foul Brood.

1. Many writers claim foul brood

originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proven beyond a doubt that chilled or common dead brood does not produce foul brood. I have, in the last five years, also proven his statements to be true in Wisconsin, but I do believe such conditions of dead brood are the most favorable places for lodgment and rapid growth of diseases. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber-bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. The foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honey-flow, but at the close of the honey season, or at time of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs, it is the duty of every beekeeper to keep everything carefully protected. Hive-entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew a case where a bee hatched from a brood cell that had ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side walls, bees will store honey therein, the queen will deposit eggs, or the cell may be filled with pollen, or bee-bread, as some call it. Said honey or pollen, when it comes in contact with those germs of disease, or the food given to the young bee, if in the proper temperature, said germs of disease will grow and develop rapidly.

Causes of Contagion.

I fully believe that if the history of foul brood in Wisconsin were known, nearly every case could be traced to

contagion from diseased combs, honey or from some diseased queen-breeders' cages. Here are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sale. Several law-suits have resulted in the settlement of some of the cases.

2. Brood-combs and various implements from diseased hives, used by other bee-keepers, and borrowed articles.

3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives so that neighbor's bees might get the honey. From those combs I lined robber bees to seven other apiaries, and each time became diseased and were treated.

4. Robber bees working on empty honey-packages in the back-yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far-distant States, even Cuba.

5. Loaning of hives, combs, extractors, and even empty honey-packages.

6. Buying honey from strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.

7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.

8. Queen-bee—by buying queen-bees from strangers and introducing her in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant States. To be safe, on arrival of queen, put her carefully alone in a new and clean cage with good food in it. Keep her in there, warm and comfortable, for a few hours before introducing. The shipping cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appeared in the hives where the shipping cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to attend a State bee-keepers' meeting

in another State and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked, "Do any of you think you got the disease by buying queen-bees?" Again several hands were raised. Even bee-keepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from abroad, I hope you will do with them as I have described above. Better be on the safe side.

Experiments.

1. A prominent Wisconsin bee-keeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey-extractor and comb-foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted, the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb-foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed and there has been no sign of disease in his apiary since.

2. Foul-brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sunheat extractor, is not heated enough to kill foul-brood germs. Several cases of contagion where robber-bees worked on solar extractor refuse or honey.

6. Comb-foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond a doubt I took a quantity of badly-diseased brood-combs from several apiaries and rendered each batch

of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood-foundation. I also took quite a quantity more of said wax, went to two wholesale comb-foundation manufacturers, and both parties willingly made my experimental wax into comb-foundation just the same as they do every batch of wax. I then divided the various makes of foundation and selected 20 of the best bee-yards in Wisconsin, where no disease has ever been known had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

Symptoms of Foul Brood.

1. The infected colony is not liable to be as industrious. Hive entrance with few guard bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive-entrance, and often robber-bees seeking entrance.

2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood are oval, smooth and of a healthy color peculiar to honey-bee brood, but if diseased the cappings are sunken, a little darker in color, and have ragged pin-holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

5. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale gluepot. A colony may be quite badly affected and not emit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

6. Dried Scales.—If the disease has reached the advanced stages, all the above-described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it so it dries down on the lower side-wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom of the cell. According to its stage of development there will be either the

shapeless mass of dark-brown matter, on the lower side of the cell, often with a wrinkled skin covering as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the side-walls of the cell. Often there will be a small dried bunch at the front end of the cell not larger than a part of common pin-head. To see it plainly, take the comb by the top-bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the top of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees and must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee-dysentery. The latter have a somewhat similar appearance but are more or less surface soiled, and will also be spotted or have streaked appearance by the dark-brown sticky excrements from the adult bees.

Treatment.

"A bee-keeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case." Dr. Howard, in his valuable book on foul brood, states, "I regard the use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin I have tried many methods of treatment, and cured some cases with each method, but the one that never fails, if carefully followed, and that commends itself is the McEvoy treatment. Canada's foul brood inspector has cured foul brood by the wholesale—thousands of cases.

McEvoy Treatment.

"In the honey season when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb-foundation starters and let them build comb for four days. The bees will make the starters into comb during the four days and store the diseased honey in them, which they took with them from the old comb. Then in the evening of the fourth day take out the new combs and give them comb-foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul-brood combs must be burned or carefully made into wax, after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done, or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey-flow. It will start the bees robbing and spread the disease to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good-sized colony to start the cure with as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb-foundation starters on. Then also in the evening feed the bees plenty of sugar syrup and

they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters and give the bees full sheets of comb foundation and feed plenty of sugar syrup each evening until every colony is in first-class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned or made into wax and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug."

A. I. Root, of Medina, Ohio, says: "The starvation plan in connection with burning the combs and frames and boiling the hives has worked the best in treating foul brood. It never appeared after such treatment, though it did in some cases where the hives were honey-stained and not boiled, thus confirming the theory or fact of spores."

All the difference from the McEvoy treatment that I practice is this: I dig a deep pit on level ground near the diseased apiary, and after getting a fire in the pit such diseased combs, frames, etc., as are to be burned are burned in this pit in the evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood-combs or those having much honey in, as they are hard to burn. If diseased combs with honey in are burned on the surface of the soil there is great danger; the honey when heated a little will run like water on the soil, and in the morning the robber-bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

R. L. Taylor, Michigan University experimental apiary, reports: "The plan that the colony be shaken out into another hive after being allowed to build comb for four days, I have proven in 100 cases to be unnecessary."

In Wisconsin, I, too, have cured several cases by the one transferring, when honey was not coming in very freely, but it is better, and a great

saving of time to both bees and owner, to exchange in three or four days those foundation starters, for full sheets of foundation. Diseased brood-combs, and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey that can be safely treated and saved. Many times it is poor economy to save all, and so many bee-keepers are not so situated as to keep all diseased material from robber-bees while taking care of it, the best and only safe way is to burn the diseased combs and frames.

Utah.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment:

"Wherever found, it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend smothering the bees, and in order to do this without letting a bee escape take a tablespoonful of sulphur and place it in the hive entrance of the hives; if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur and it will soon kill the bees. This should be done early in the morning before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed so as to prevent any other bees from getting in. Then as soon as fruit blossoms come out so the bees can obtain honey I treat them. I procure an empty box of any kind so it is clean, then find the queen, put her in a screen wire cage which is easily made. Take a small piece of screen, roll it up and tie a string around either end, cork up one end, then place the queen and a few workers for company in the cage and place in the other end cork. Put same in this box and shake all the bees out of their hive into this box. This must be done in the evening when no bees are flying. Keep the queen in this box for 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive

with good healthy combs or foundation and shake bees into it, letting the queen go and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Wherever strictly followed, this has effected a cure."—C. Wilcox, Emery Co., Utah.

Pickled Brood.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries to doubtful hopes but those same colonies, after I gave them treatment, were in a month free from all disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen 60 colonies in one apiary badly reduced by it. As an experiment one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them and all were soon free from dead brood. At the same time I took ten of the worst brood-combs, where at least two-thirds of the brood were dead, and placed these combs in other strong, healthy colonies. They at once cleaned out the dead brood and reared as nice brood as one could ask for.

Symptoms.

The larval bees (in last of May and through June) show light-brown spots; a little later the cappings have small holes in—the cappings are not shrunk-en or dark-colored as in foul brood. The dead bee will be first swollen, with a black head, dried to a hard bunch and often turned up—China-man-shoe-like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish-colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell, does not at any time stick to the walls of the comb, is easily pulled out of the cell, is never ropy or sticky, and if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep the bees and brood comfortable on cold days and nights.

Never put bees on old black brood-

combs, or those with dead brood in; better make wax of the combs and give the bees full sheets of brood-comb foundation.

Treatment.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered so as to be warm on cold days and nights there will be little or no pickled brood. If the queen is old, shows signs of weakness by putting several eggs in one brood-cell and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and when queen-cells are started, remove them all and give them a queen and bees, between two of her own brood-combs from a hive where she has lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin between dandelions and white clover bloom when there is no honey coming in from flowers and often cold days and nights so that the live bees consume the liquid, unsealed honey first, and cluster in a compact body to keep warm, the result often is the larval bee, just changed from the egg to a tender little grub, is either starved, half-fed or chilled so that it grows slowly and too often it dies, and then it is we first notice this about the time white clover honey begins to come in. In other parts of the State, where pickled brood appeared it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey or even sugar syrup, and kept the hive warm, all dead brood soon disappeared, while in the same apiaries other colonies affected and not so treated continued for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall with a young laying queen, and an abundance of good honey sealed or capped by the bees, if properly cared for during winter whether in the cellar or in chaff hives, wintered out of doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.

Black Brood.

Black brood is another fatal and contagious disease among bees affecting the old bees as well as the brood. In 1898, 1899 and 1900, it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin, which was quickly disposed of. Dr. Howard made more than a thousand microscopic examinations and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn black and die. At this stage there is a sour smell. No decomposition from putrefactive germs in pickled brood. In black brood the dark and rotten mass in time breaks down and settles to lower side-walls of the cell, is of a watery, granulated, syrupy fluid, jelly-like, is not ropy or sticky as in foul brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house-fly will set a foot upon it.

Treatment.

Best time is during a honey-flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters and giving full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

Dysentery.

Dysentery among bees in Wisconsin in the spring of the year is often quite serious. Many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky, and very disagreeable-smelling and is sometimes mistaken for foul brood.

Causes.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.

2. Poor winter stores gathered in the fall from honey-dew, cider-mills, sorghum-mills, rotten fruit, also some kinds of fall flowers.

3. Old and especially moldy pollen or bee-bread.

4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means, such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation so that all is dry and comfortable. If mold forms on the combs or cellar so damp as to form mold, there is great danger the bees will have dysentery and die.

Treatment.

1. First of all, have an abundance of combs of sealed clover or basswood honey in brood-frames carefully saved, and see that each colony is wintered on such food. Three or four such combs will winter a fair colony safely if confined on those combs late in the fall and the hive contracted to fit the same. This is one of the most important conditions for success in wintering.

2. If in the fall the bees have gathered this unwholesome honey from the above-named sources, it should all be extracted and either exchanged for those honey-combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.

3. Hives contracted and made comfortable, whether in cellar or outdoors.

4. If wintered in chaff hives outdoors with feed as above directed, and there come one or two warm spells during winter so that the bees can have a cleansing flight, they will not have dysentery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar the bees will not need as much honey, and if the winters are generally long with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a uniform temperature, about 42 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slaked lime on the bottom of the cellar may help if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best-grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff-hive.



J. Q. SMITH, President.

PROCEEDINGS
OF THE
EIGHTEENTH ANNUAL SESSION
OF THE

Illinois State Bee-Keepers' Association
NOVEMBER 19 AND 20, 1908.

Morning Session, Nov. 19, 1908.

The meeting was called to order at 10 A. M. The financial report of the Secretary, and the report of the Treasurer were read and both were accepted.

The compendium of the Secretary's and Treasurer's reports (which agreed) shows as follows:

1908.

Nov. 20. To amt. in Treasurer's hands belonging to State Bee-Keepers' Assn..... \$204.94

Nov. 20. By amt. paid out by Treasurer during the year 75.00

Nov. 20. To balance..... \$129.94
1907.

Nov. 20. To balance in Treasurer's hands belonging to State Appropriation Fund..... \$1,110.60

1908.
July.

To amt. received on State Auditor's warrant 1,000.00

1907.		
Nov. 20.	By expense of delegates for programme for meeting	28.20
1908.		
Nov. 18.	By J. Q. Smith and assistants for inspection	461.89
Nov. 18.	By expense connected with publishing report	210.57
Nov. 18.	By expense of conducting handling live bees at fair.....	58.50
Nov. 18.	To balance.....	\$1,351.44

President Smith appointed the Auditing Committee as follows: Dr. C. C. Miller, A. L. Kildow and Geo. W. York.

Mr. President: Any unfinished business?

Secretary Stone: Mr. President, you haven't called on the Secretary for his report.

Mr. President: You may read your report.

Secretary's Report.

After our last meeting we sent out blanks soliciting members to one thousand bee-keepers. Some of them were laid aside and have come straggling in at times all through the year—some of them too late to be named in the report.

We wish to urge the necessity of bee-keepers looking after this matter.

Last year a party who had let his dues lapse in the National had a lawsuit caused by his bees stinging his neighbor's horses to death, and when he sought help from the National found his dues had lapsed several months—so he got no assistance.

Many bee-keepers do not understand that a membership in the National protects them against a spiteful neighbor to one-half the expense of the lawsuit that is sometimes brought against them.

Send in your fees as soon as you can after the receipt of the blanks, and further neglect ends.

Something ought to be done further to encourage the affiliation of other societies, as was voted in our convention Nov. 15, 1904, to change Section 1, Article III. of the Constitution so as to allow them to come in as a whole on payment of an aggregate fee of 25c per member.

We would recommend as the Chicago Northwestern is so scattered in

the different States and refuses to come into our Association (and for good reasons, as some of the members from other States say, "Why not affiliate in our State?") that this State Association offer to receive the members of the Chicago Northwestern so far as they belong in this State, and that we send a delegate to the convention in December to secure their membership thus far.

We had 500 copies of our sixth annual report printed, 400 in cloth, so as to have extra copies to place in the hands of each of the legislators, and for that reason we solicited the letters regarding the needs of a foul brood law. These letters will go into the hands of all the members of the next General Assembly.

We had these letters in the last report for the reason that our reports are delayed so long waiting for the members to come into the Association that they are hardly in print till the legislature is ready to adjourn.

We asked the State Board of Agriculture to give us a premium for handling bees at the fair, which they did, and we had Mr. Louis Werner at it every day of the fair when it was not too cold.

Mr. President: You have heard the Secretary's report.

Mr. Geo. W. York: I move the report be accepted and placed on file.

Mr. President: Motion carried and report of Secretary placed on file.

Mr. A. L. Kildow: The Legislature wants this report out so they can see it. We ought to get this foul brood law through if we can. We ought not to leave anything undone. If they want this report out we ought to get it out, let the members come when they will, we need this law and ought to do all we can to get it.

Mr. Stone: These letters are in this last year's report.

Mr. A. L. Kildow: That is a year behind.

Mr. Stone: What I said in regard to the foul brood letters was, they were sent out last year after our convention, and we have four hundred reports in cloth binding so the legislators could have them. We got the appropriation but we haven't the law.

Mr. Lee: We would like to have this law this year if we can.

Mr. York: Mr. President, I make a motion that a delegate be elected to

go to the next meeting of the Chicago Northwestern at Chicago, which meets Dec. 2 and 3. I think it is a good thing to do that now than later; it might be overlooked.

Mr. Pyle: Mr. President, I move the chair appoint a delegate to that convention.

Mr. President: I don't like to take that responsibility on myself. Perhaps I might appoint someone that would be favorable to all, and he might not. We want someone with the ability. I would like the Association to do that.

Mr. York: Mr. Chairman, I don't want to talk too much or make too many motions, but I think it would be nice for this Association to elect its President. I make a motion that Mr. Smith be sent to this Chicago Northwestern Convention.

Mr. Stone: I second the motion.

Mr. Kildow: The motion is that Mr. Smith be elected the delegate to the Chicago Northwestern Convention.

Motion carried.

Mr. President: I thank you for the honor and I will endeavor to be there and do all I can.

Mr. York: Mr. Chairman, as President of the Chicago Northwestern Bee-Keepers' Association, I extend a cordial invitation for all members who can to be there.

Mr. President: I hope all who can will be there.

Mr. Stone: I want to make a motion. It will be remembered that we changed our constitution four years ago so as to take in all the societies as a whole on the payment of twenty-five cents per member.

Now, I wish to make a motion, that we extend this invitation to the Chicago Northwestern as includes just the members that are in this State; they can't come in as a whole and they don't want to come in that way. As I said in my report, I have been told that members of the Chicago Northwestern who live in other States ask, Why not affiliate with other associations in our State? That question will come up again. I move our delegate be instructed to offer them that privilege just as to those living in this State that want to come in as a whole, that they will be permitted to come in. It will be a step aside from the constitution but we take in other societies that have had as low as six members; I don't see anything wrong in

this. I hope my motion will be seconded.

Mr. Pyle: It looks to me that there ought to have been a motion to amend that amendment of the constitution to take in all the members of this State. I will make the motion that way.

Mr. President: Mr. Pyle, that amendment was put and carried four years ago that all members of other associations that wanted to could come in by paying twenty-five cents.

Mr. Pyle: All the members of any society residing in the State of Illinois?

Mr. President: I wouldn't object if they were out of the State; the more strength we get is by uniting the societies.

Mr. Pyle: If the people of the Chicago Northwestern that reside in the State or any association or part of one that reside in or out of the State be allowed to come in, that would be all right.

Mr. Stone: Mr. President and Mr. Pyle, I don't think that we need any further amendment than we already have.

Here amendment was read.

Mr. Lee: Can't States generally have an own State Association?

Mr. York: Mr. President, The Chicago Northwestern is not an Illinois association. It is made up of a number of States, so you wouldn't have anything to do with any association not distinctly an Illinois association. I don't think you could amend your constitution to take in the Chicago Northwestern. It is not an Illinois association. I don't think you can amend it so as to take in the Chicago Northwestern because it is an outside association. It is not an Illinois association.

Dr. Miller: Mr. President, as I understand this, the whole idea in the first place was having a society coming in as a whole, and now the only thing we have in view to interpret is this matter to apply to the Illinois members of any society and consider that the whole. The idea is that if a society, any society comes in, and pays twenty-five cents for each member of the society, it comes in, there is a little change in the interpretation to apply to the Illinois residents.

Mr. York: You don't want to divide any association in Illinois. You don't want to take a part of any association.

Dr. Miller: That is it, exactly. You

can take the Illinois members of the Chicago Northwestern Association as a body.

Mr. York: Suppose there is a Bee-Keepers' Association in Illinois, you want to take in all the members? Suppose you had a Sangamon County Association, only want to take in part?

Dr. Miller: Yes, sir; if there are part living in Michigan, take them in.

Mr. President: I think there would be no objection to receiving any Illinois bee-keepers that want to come in.

Mr. York: No, sir.

Mr. Pyle: Would our constitution allow it? That is the reason I made the motion to amend the constitution.

Mr. President: Can we amend the constitution by a motion? I think it requires a resolution.

Mr. Stone: Mr. President, I don't think it needs it. You can't amend it unless you announce it at a previous meeting and then vote on it the next year.

Mr. President: We will fix that at the Chicago meeting. If they want to come in we will take them.

Mr. York: Mr. President, there are so few people outside of the State that belong to the Chicago Northwestern Association. It seems to me if the thing is properly done, if President Smith can be present we can arrange it so we will have a larger membership than any other year.

Mr. Stone: Mr. President, there is one thing I want to say and impress it on our delegate to the Northwestern. Dr. Miller said this morning that there was some complaint on account of the invitation of our society to the Chicago Northwestern. That we didn't divide up with them any of the State appropriation. The State appropriation is given to publish this report and run our Bee-Keepers' State Convention, etc., etc. Other societies of the State, horticulturists, etc., go to other affiliated societies and ask if they will allow them to have their report published with the State report. If they will bear the expense of the proceedings, then they are all published together. Now this State law will allow us to do that same thing, and go to the Chicago Northwestern and say to them, if Mr. York or some one else isn't going to pay for the proceedings, the stenographer, we will go there and pay that stenographer and give them

the report of their meeting in our annual report. They get just as much benefit if that is done as the State Association does. Mr. York paid for the shorthand report of the Chicago Northwestern several times because he wanted to publish it, then we go to Mr. York and he charges what he can afford for publishing our report. He gets his pay that way for the shorthand report. Last year we had our report published in Springfield. Then we send to Chicago and buy it of Mr. York, isn't that the same thing? They receive the benefit of our report.

Mr. President: You want to impress that on them, that they are sharing in it as much as our Association is. We aren't allowed to stick our hands in that treasury. Our Secretary and Treasurer get their pay out of the dues to the Association. We are not allowed a cent out of that appropriation, that is a thing they must understand.

Mr. York: Mr. President, that thing wasn't touched on before. I thought this year we wouldn't have a reporter, and I don't see why that wouldn't be legitimate and proper for you to pay for the stenographer, and I think our Association will go in as a body. You will get every vote out of the Chicago Northwestern.

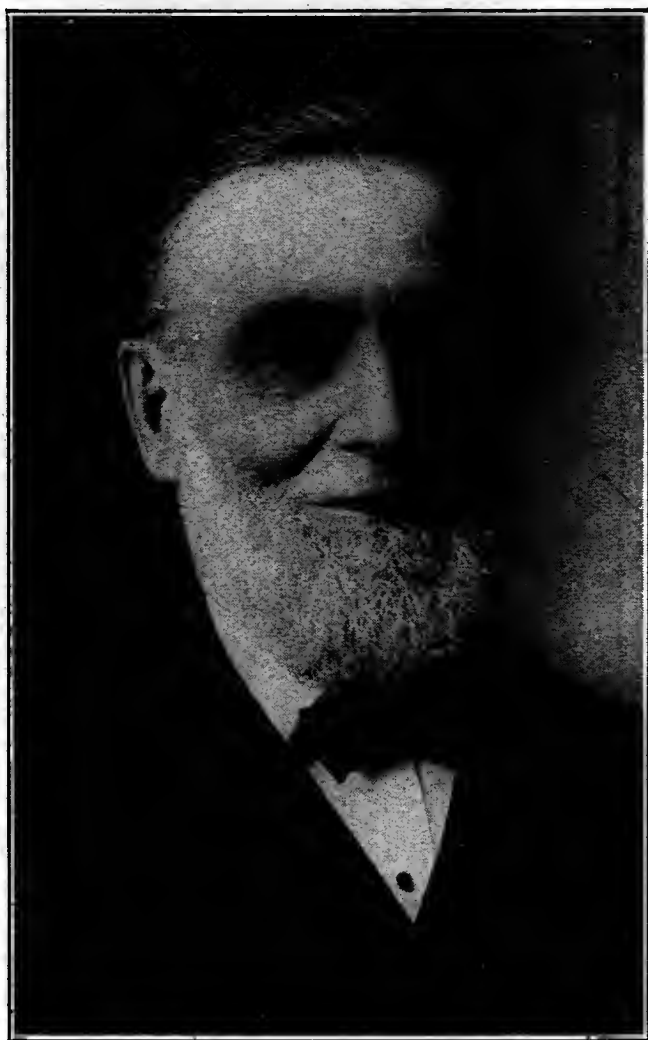
I don't have room in the American Bee Journal to publish it, but in your report you have. In that Association we have leading bee-keepers from several States. We have a great meeting.

Dr. Miller: You are getting at it. In that meeting some of us tried to get it under the wing of the State Association. Some members said what interest have we, we have not an Illinois Association, what's in it for us? we are not going to help this association. Now, if we can say, you are going to get something out of it, they will.

Mr. President: They will get their own report with our annual report.

Mr. Stone: Dr. Miller, you can thank yourself for this.

Dr. Miller: I want to say to you, friends of this society, I think Mr. Smith knows personally more than anyone else, that the death of the old Northwestern was due to me. That Northwestern Society was killed. Now they have another society there and



DR. C. C. MILLER.

it doesn't interfere with this one, and we have worked and tried to have them interested together, but when these outsiders take hold in this way there is nothing for us to do, what can we say? Now when you take that measure you can do that.

Mr. Stone: Mr. President, I make a motion that Mr. York be authorized to employ a stenographer to take down the proceedings of the Chicago Northwestern Convention for the Illinois State Bee-Keepers' Association.

Motion carried.

Mr. President: We are under the head of receiving new members. Anybody present that wants to join or pay his dues?

Mr. Stone: Mr. President, I want to say in connection with this motion that they ought to be reminded that they are entitled to elect a delegate

and have their railroad fare paid, both ways, from all the affiliating societies, and that member they will have to elect at that meeting because our meeting comes before their next meeting.

Mr. President: We will have intermission five minutes.

Mr. President: We are now under the head of miscellaneous business.

Mr. Becker: Mr. President, the restaurants and hotels are very much filled up. Why wouldn't it be a good idea to adjourn till one-thirty (1:30) o'clock? I don't like to go into them so late. I move we adjourn until one-thirty (1:30).

Dr. Miller: I second the motion.

Mr. President: I move we allow Mr. Becker to go early. We will adjourn at eleven-thirty (11:30).

Mr. Stone: Mr. President, we have

a member here from Chillicothe. His bees have some disease, and it weakens the colonies down one-half, but it will yield to treatment similar to foul brood.

Mr. W. H. Gray: Mr. President, it has been with us three years. We got somewhat scared. It is something like foul brood. We have bees that couldn't get into the hives or get out.

I wrote to Dr. Miller but before I got his letter I got a jacking up from him through the Bee Journal for not reading up on bees and foul brood.

Bees would die when three days old and even coming out of the cell. Well, we doctored it the same as we would have foul brood. Some got well, most of them did.

We thought we got clear of it. Of course we were not fixed in good shape for it during the next year. First year thirty (30) colonies, maybe there were thirty-five (35) or fifty (50).

I sent some of the brood to Mr. France, and he said it was neither foul brood nor black brood.

In May there wasn't thirty (30) pounds of honey. We had pretty much cold weather; it was very cold. They didn't gather much. Last winter and last spring it was worse than ever. It was all through the yard. I changed everything but twelve (12) colonies. Wherever a colony was strong enough they would clean it all out clean. Some that I didn't change, three or four, along in June. Some got rid of it, but it is still there, and what it is I don't know. They clean the comb out clean. It doesn't draw down on the side walls and doesn't draw out when you draw out the brood, but what disease it is I don't know.

We had some at the fair. The gentleman there pronounced it foul brood.

I have some that was in the foul brood but it doesn't show up like anything we have. The young bees don't seem to turn color. They just stay watery.

Dr. Miller: It seems to me, Mr. President, that a vote of censure will be proper when we have more diseases than we know of.

Mr. President, if Mr. France said it is different from the other diseases I would have greater faith in his word than anything.

Letters that were sent to me or inquired of me, if they were sent to him

you would do better. I know nothing of bee diseases.

If any of you have anything you are suspicious of as being foul brood, or anything of that kind, better send it to Mr. France at once, as he is a member of this Association.

Always send it so it can't do any harm. Put it in tin or something, so it is thoroughly provided against breaking out.

Mr. Gray: I put it in a tin box and sent it.

Mr. Hyde: Mr. President, I didn't understand what you said about the bees and their honey.

Mr. Grey: That was May last year. It was there most of the time, and up to the last of May or the first of June, when I would go through, they had a little new honey, but they wouldn't have one hundred pounds in one hundred colonies. They have it when there is plenty of honey.

Mr. Hyde: I have an idea it is what is called starve brood.

Mr. Holekamp said it was starve brood. I was down to St. Louis and he told me that. He told me it was starve brood. When they don't raise much honey they don't have much brood.

A Member: Is this disease in all of your colonies?

Mr. Grey: In most. I changed them around.

Mr. Hartmann: Did you find them in the new swarms as well as the old?

Mr. Grey: Remains with the old swarm, and sometimes after we change them find them in the new ones. We got a tank last year and cleaned them all up but still they might have got something from one place or other.

Mr. Lee: Dr. Miller, is it possible to have any starve brood? They suck all the moisture from the brood. I claim it is impossible to have starve brood.

Dr. Miller: Mr. President, McEvoy, the starve brood expert, says it is very often the case that it will be a case of starve brood where it is supposed to be foul brood. It is simply because there is a shortage of storage.

Mr. Lee is correct in one respect. When bees actually get short of stores, when they have nothing to feed their

brood, the brood will be destroyed. The juice is sucked out.

If I understand rightly, Mr. McEvoy distinguishes the starvation of the whole colony. He distinguishes it by saying this starve brood is a case, where there is enough to keep them going, so as not to destroy the brood, but still so small an amount that it is stunting the brood, and some more or less die in that way. It appears as a disease when it is then only a starving of the brood. It is barely possible the case here may be what Mr. McEvoy calls starve brood.

Mr. President: He said if there was plenty of honey flowing the disease was still there.

Mr. Gray: I should say it has hung on for three years.

Last fall we had a good fall flow. They had plenty of honey. Had a fair crop this year, extra good, it keeps right up.

Mr. President: I don't think it is starve brood.

Mr. Pyle: I would say it was poison in some form. It appears to be coming out even after the bees are sealed up for eight or nine days, like at the capping period. If it was the unsealed brood it would be some manner of poisoning.

Mr. President: Wouldn't that affect the old bees?

Dr. Miller: Some cases, yes, sir. Some, no, sir.

Mr. Insmere: I live down in Christian county. I had over fifty hives affected like my friend; only way I would find was to shake them off on a full fed foundation. I transferred some and the queen would come up from the foundation, and where the body was affected top was affected also. Only way I could find was to shake them off on a full fed foundation. That is the only remedy I could find.

It struck me two years ago. I have practically gotten over it. My bees are in good shape now. I was affected for two years and I expect fifty or seventy stands.

Mr. Spracklen: Mr. President, this foul brood and sour brood and such diseases as that I have had no experience with. I have once in a while a stand that will lose out, and come out on the ground and lay down and die, which I attribute to poison, be-

cause of foul brood and sour brood I am perfectly ignorant.

Dr. Miller: I do not think we can get any more light on this subject. I would suggest that a sample of this be sent to Dr. Phillips at Washington. I think in that way light may be thrown upon it. It looks like a new disease. I would send a sample to Dr. Phillips at Washington. I think you can find out there if anywhere what it is.

The President: Any further discussions?

Dr. Miller: I would suggest, Mr. President, that slips be passed, that members may write questions for the question box.

The President: The Secretary will pass them.

Dr. Miller: I think in that way we can get the good of it through the question box.

Mr. Kildow: Have we any rates with regard to the shipment of honey in glass and in the comb?

The President: I don't know whether there is a special freight rate, but there is by express.

Mr. Kildow: We are in a tangle in our neighborhood, and I would like to know if anybody knows anything about it? It was in my mind that a year or two ago there was a rate on honey. Since that time I sent some and they class honey in cases as honey in glass, and the honey in glass is listed honey in glass.

I had a case this fall to be shipped to Peoria in our State. It is classed honey in boxes eight by four (8x4), by car, and ten by four (10x4), by local. When we shipped it to Peoria most of the honey was packed in the car in cases and filled up with straw behind and in front, and a few crates of honey were just crated in the crate.

When the car was opened at Peoria the inspector got sight of the honey in the glass, and he charged us the same for honey in cases with a little strip of glass, as for honey in glass. It looks to me like that is wrong. He classes honey in wood cases with a little strip of glass as honey in glass.

I thought I would bring it up to see if we could throw any light on it so we could remedy it.

The President: I think that is a good question and it ought to be talked on. I know the rate is too high.

Mr. Kildow: Wouldn't be so high if

it was classed right. He makes no distinction between liquid honey in glass and comb honey in case. I would like to hear about it.

Dr. Miller: Mr. President, I make a motion to adjourn for dinner and allow Mr. Becker to go with the rest of us.

At the close of this discussion the convention adjourned to meet again at one-thirty (1:30) P. M.

Afternoon Session, Nov. 19.

The President: The meeting will please come to order. I will just state this, this afternoon any member addressing the chair will give your names so the reporter can get your name. Speak loud and not too fast so we can get it all in our report.

The first thing on the programme will be a reading by Mrs. Snyder.

The President: We will take up the question box. Mr. York, will you read the questions?

Mr. York: Yes, sir.

Mr. Stone: Mr. President, here is the report of the Auditing Committee.

The President: Read it, please.

Report of Auditing Committee was read and on motion received.

Springfield, Ill., Nov. 19, 1908.

We, the undersigned, Auditing Committee, having examined the accounts of Treas. Becker and Secretary Stone, of the Illinois State Bee-Keepers' Association, find same correct.

Rob't Holekamp,
A. L. Kildow,
George W. York,
Committee.

Read and approved and ordered filed.

The question box having been called for, the questions having been handed to Mr. York, he read them.

Question No. 1.

Does smart weed produce much honey, and what is the quality?

Mr. Kildow: Smart weed doesn't produce any honey that ever I saw.

Dr. Miller: Smart weed is a great honey plant. Very likely the person that asked the question didn't have smart weed in view but heartsease.

What is properly called smart weed is that which has a very pungent taste; if you bite a leaf you wish you hadn't. It doesn't grow as high as the other. What is called smart weed and yet

what is not, is heartsease. It has a taste which is very mild. That is a great honey plant. I don't know whether the real smart weed is.

Brother Kildow, have you plenty?

Mr. Kildow: I think so.

Dr. Miller: The heartsease which is often called smart weed is a great honey plant.

Mr. Kildow: I answered the question as given.

Smart weed in our country is just about that high (indicating the height). And men of my experience never saw a bee on it, but heartsease is a good honey plant in our neighborhood.

Dr. Miller: What color is it?

Mr. Kildow: Light amber.

Mr. Stone: Heartsease is one of the finest honeys we have. I have great difficulty in telling the heartsease from the real smart weed till I see the mark.

A man told me how to distinguish it. He said, "It is the lady finger;" you can rub it in your eye. While he was saying it he rubbed some of the heartsease in his eye. I did, too, and you taste the leaf and it is good. Animals like to eat it. It is something in its nature like slippery elm bark. He said, "Whenever you see this mark of a kind of heart-shape in the leaf and a blood color, you could be sure it was not smart weed."

He then said when Adam and Eve were in the Garden of Eden she cut her finger and wrapped it in one of these leaves. That is the only way I can tell them apart. I often see smart weed that you can't tell very well. I have seen heartsease so high I could hardly get through it.

Mr. Spracklen: I think the brother is right with regard to the real smart weed not producing any honey. I think I thoroughly investigated that and I don't think I ever saw a bee working on smart weed, but the plant called smart weed by a number of people is what we denominate heartsease and is a great honey-producing plant in our country.

It is as Brother Stone says, you will always find that dark shade representing a heart on each side of the stem of the leaf showing the shape of a heart.

Question No. 2.

About the quality of the honey?

A Member: The quality is fine. About as fine as I have procured for our market. I have customers that prefer it to any other kind of honey that I can get. And the heartsease, they call it spring honey when it is fall honey.

Question No. 3.

Is it safe to feed bees sour honey in the spring for a stimulating brooder?

Dr. Miller: In the spring when bees can fly daily it is safe to feed them anything they take. It is very different than feeding for winter use.

Question No. 4.

What is the best way to cut section foundation?

Mr. Lee: I think the best way is to have the pieces cut at the same time they are placed in the section.

Mr. York: What machine is it?

Mr. Lee: I made it myself. I got the idea from that machine that McCarthy made. Instead of that foundation being carried outwards and cutting holes in the foundation pieces between two runners I make the foundation myself eight or ten feet long.

The Chairman: Dr. Miller, will you please tell us how you do?

Dr. Miller: I take the strips, I think, fifteen and one-half inches long, and I use both top and bottom starters, and the same strip will be cut into part top and part bottom an equal number of each. And I have a frame to lay over. I put two bars seven inches deep of those strips of foundation, that is, of the fourteen feet. You can take a different number but that is a convenient number, and put them side by side seven feet, for this form rises over it with little strips against it. I use my knife, as that is very much easier.

It is a little after the style of a miter box. I could very quickly show you.

It is simply a number of strips at the proper distance apart and two strips crosswise, and that is laid on top of the foundation, and that gives the right size.

In cutting it I use a common knife, a pocket knife part of the time or a casing knife. A casing knife is good for cutting across so as to have a sharp angle. Some cuts we cut clear through the whole thing.

Mr. York: Perhaps some would like to know the depth of the starters at the top and bottom. What is the width of each?

Dr. Miller: I don't know.

Mr. York: Well, the lower ones?

Dr. Miller: The foundation inside is about four inches deep, and not quite four inches wide, a space of about one-eighth ($\frac{1}{8}$) of an inch at the bottom starter and five-eighths ($\frac{5}{8}$) of an inch at the top.

Mr. Pyle: I was the person who wrote that question. I thought somebody would gain information from that.

Some men say, I take a strip and cut a strip at a time.

I just take a pound of foundation. Take a sharp casing knife that has a rough edge and put the knife in water and they will never stick together, and you can pack them up and let them lay several years with paper between and they will never stick. Take a sharp casing knife, put it in water and it will cut nice and clean.

Dr. Miller: Cut with the paper between the parts?

Mr. Pyle: Yes, sir.

Dr. Miller: When using the little sections?

Mr. Pyle: It does not stick if cut with the cold, rough knife.

Question No. 5.

How would you advise a beginner to start in the bee business?

Dr. Miller: Not very long ago I was asked the question whether it would do to start just with buying a queen. I said it would not.

Mr. Moore: I would suggest that the best way would be to get a few good bees and a good bee journal and a good number of good bee papers. Take one colony of bees and by steady working with them and by natural increase he would have all he would want.

Mr. Pyle: I received an answer of Dr. Miller years ago stating, get two or three bee books and a bee journal and read them two or three years and then a smoker, and then start the bee business.

Mr. Moore: I think he needs a little actual experience along with the journal.

Question No. 6.

What kind of bees are the best to start with?

Mr. York: I should think honey bees would be a good thing.

Mr. Becker: I wrote the question that was asked. A minister was present and had a talk just before dinner. He would like to have a little more light on this question.

He is located below Springfield by Rochester, in a good country for white clover and also fall clover. He is quite a poultry man but he is unfamiliar with bees.

He is thinking of investing some money and starting in with bees. He is the one that asked me. These answers given are very good but they wouldn't be to my satisfaction.

When I started in the bee business I bought about twenty colonies from a man in Christian County by the name of G. G. Lamp. He is dead now. It happened to be a good year that year. The first year in connection with the bees I got an A. B. C. culture and I don't think anything is equal to it to a new beginner. If he has any difficulty with his bees he can turn to the index and look for it; everything explains itself. Of course, you know how bee-keeping is, it has its ups and downs, generally more downs than ups.

My ambition always has been to have one hundred (100) colonies. Three years ago last spring I had them. Two years ago I had less. I now have eighty-two (82).

This has been one of the best years we have had in my locality. For ten (10) years, at least, there has been no better.

I would advise new beginners if they are in a good locality to start with four or five (4 or 5) colonies with good hives, and have the hives alike, and have all the hives the same kind. I have four (4) different hives and I know the difficulty I have to contend with during swarming season and honey season to get the frames fitted. Many times when I want to get two or three (2 or 3) colonies together I have to run around and look for a frame that will fit in that hive. Therefore, I would advise a bee-keeper to have all the hives alike. They are all good that I have now. And not invest too much money the first year. At the end of the year, if it is a good honey season, if he likes it or his profit safe, the bees will increase very rapidly.

And in a bad season the decrease will be in proportion to the increase.

Dr. Miller: I think the advice given is good, and one thing further, I think it will be best to begin with pure Italian bees. He is not likely to continue with them, but I think these are the best bees for them to start with.

Mr. York: When a beginner is advised to get several of the bee books and bee papers and also talk with some practical bee-keeper a man might as well come in and say, How would you start farming? That would be impossible. But it seems to me when the advice is given to get bee books and papers from Fall to Spring and then get some bees, and if he can talk with some practical bee-keeper he will be all right. But it is impossible to tell all the points about starting with bees.

Dr. Miller: I would like to suggest a little addition to the answer as given. In the first place, I wouldn't advise the average beginner to get several, I would advise him to get one before the bee paper. He must have the book, anyhow, and there are some, perhaps, who want to get more, but generally speaking, one book is enough. I would say begin and get your bees in the spring. When to start with the bees depends on the time of the year.

If a young man should come to me in the spring and ask when to begin with bees, I would say, get the bees and a bee book. And if he would come now I would say, get a bee book and bee papers and read till next spring your books, but for the sake of supporting these bee papers and editors I wouldn't advise him to get the books before the bees.

Mr. Stone: I expect he forgot how he started.

I find anything I read up on before I start to practice it I don't know anything about it.

You may think you know all about farming by reading, but you don't remember anything you read unless you have had a little practice. And I will take the practice before the bee books, and I would advise the getting of a bee journal the first thing, and you see the ads and know what you want to start with. When I first got the bee journal I would look at the ads and they always advertise what you want, and you won't make a mistake

and start with the wrong hive, but you can understand what hive to get from your neighbor bee-keeper if he is keeping them.

I don't believe in starting in by getting hogs, sheep, cattle or anything you start to raising and go in on a large scale. I believe in going in on a small scale and getting the practice, and you are much surer not to make a mistake than if you go in larger.

Dr. Miller: Supposing a man comes and says, "I will get some bees next spring," would you advise him to get the bee books?

Mr. Stone: No, sir. How can anyone understand what he reads till he has some practice? I would have to go right to the book again. I don't think any person has a perfect memory of what he reads.

I wouldn't advise anyone to go into it very largely and depend on making a specialty of it till they have worked large enough to have out-apiaries. I don't know a successful specialist that has just one apiary. He has to have a good many and know how to use them before I would advise a specialty.

Mr. Spracklen: My experience in bee culture comes from personal experience. When I started I got a nucleus with a queen and from that I have run to one hundred and seventy-five (175). A year ago I had quite a loss. In July and August they starved. I was sick and they used all the honey and I lost about sixty (60) stands of bees.

My advice is to get a good hive, one that you can rely on, and stay with it. I am bothered myself with two-styled hives. I first used the improved simplicity top bar, it is only fourteen and one-half ($14\frac{1}{2}$) inches long. I have found out it is a mistake and quite a job to change from that to a longer one, although I use both I shall discard the top bar. I got too much experience, but I think the journal and bee book of the standard would be what he would need and some Italian bees.

Mr. Hartmann: I was the one who asked the question and a great many different opinions have been given to me. I have been recommended to the A, B, C Book. We have heard a great deal about good hives. What is best to one man is not best to another. This brother on my right says he has all kinds. Some say mixed bees do

better than just one kind. If mixed bees do better, why not have them? This brother said he would not keep the Italian bees long before they would be mixed.

Mr. Moore: The A, B, C Book is the best book for a man to study. There are other good bee books, but I would advise all men to get the A, B, C Book.

Dr. Miller's Forty Years Among the Bees is a good book. A man needs considerable experience. And use the Langstroth hive with the Hoffman brood frame made the L size and eight (8) for comb honey and ten (10) for extracted.

Dr. Miller: Of the different frames I have tried the Hoffman staple spaced and the Dancenkaker, I like the Hoffman spaced frame better. I have had several sets of frames. I bought bees in from others.

I would advise a beginner to get a Hoffman frame and a Langstroth hive. You can get them from any firm. I expect there are dozens of factories that make them. Far as the bee papers are concerned, I take the three papers today, and I wouldn't miss any of them.

I think Mr. York's paper for a beginner is the best and it contains more for a beginner than a paper published for those more advanced. The other papers are good, though.

Mr. York: I would like to ask Mr. Moore regarding the staple spaced frame, would it separate?

Mr. Holekamp: Where a person is working for extracted honey, any frame that has a high edge is all right, for often he wants to use the same frame in the super as in the chamber.

Now, I am using the Hoffman frame, but I have got all kinds of frames. I bought all kinds, and I am trying to get them out of the way, and I am getting them out.

For the body chamber I prefer the Hoffman frame. When I want to take them to the apiaries they do not fall together in the hive and mix the comb. For extracting I like a narrow frame, otherwise a frame and bars of the same size, because it is so much easier to uncap. The Hoffman frame is not so hard, but when they are to a ten (10) frame hive it is very difficult to uncap them, but all around I would advise the Hoffman frame. If it is difficult, it can be uncapped without spoiling the knife in doing the work.

Mr. Moore: In spacing a little farther apart?

Dr. Miller: I would advise a beginner to be a little careful about the kind of frame he uses, because there are some that are very strongly of the opinion that there are none so good as the Hoffman, while others think it is an impossibility. The difference is so great. We don't know whether he is going to strongly favor the one kind or another.

Mr. Holekamp looks like an honest man. If he would die suddenly and will me his Hoffman frames I wouldn't have one of them. So long as there is that great difference he must decide himself. I am trying to show you here, there are two men, Brother Holekamp and myself, on other subjects we are friends, so be careful here. Among one of the things I notice, when some one speaks of the advantage of the Hoffman frame, why he compares that as if there were no other kind of good frame. Is it for comb honey or for extracting honey? I wouldn't give a blue button what kind of frames they are as far as the uncapping is concerned. There are more things you must consider. There may be such a thing as a self-spacing frame. There are some say they will interfere with the uncapping. There may be one that will not interfere. For instance, the ones that I have. There are four spacers on each frame, one on each end, but on the opposite side. The spacers don't need to conflict with the knife at all. When you start away from those two spacers there is no touching at the other end. But there are those who have used this kind and say the spacers don't interfere.

The beginner should decide himself what kind of frames he wants. You find out if you have brains enough.

A Member: I started with the Hoffman frames. There may be better ones, but I have not used any other than Hoffman frames. It is what a man starts out with, and if he uses something else probably he would like that. I have not used anything else but the Hoffman, and I don't want any other. And I sell thousands and thousands every year.

Mr. Stone: I use a good many of the Hoffman frames in my upper chamber for extracting. I use nine frames for a ten-frame hive. They are always heavy, so I don't get the

benefit of the spacers. But I don't object to the spacers being there. I can't push them together any further than just so far.

I like the Hoffman frame, but I am not prejudiced in favor of it. The doctor objects to the cutting up and down. I believe when I go up the side of the frame from me I can make more time cutting towards me from the opposite side, especially if the comb is a little cold you can get the curve of the knife and they won't stick to the honey.

Mr. Becker: I wouldn't have a Hoffman frame for extracting honey. I have some few but I don't extract out of them.

Mr. Stone says he puts nine in a surplus chamber. Well, I use ten (10). We use the same hive. We both had them shipped together.

I only use an eight-frame in a ten-frame hive. I want a good wide comb. If I use an eight (8) frame I have nothing to do but just to go ahead, and I cut up. A good many cut down.

I learned the shoemaker trade when I was young. I learned to cut toward me. If you cut you mustn't cut in the boot and shoe but in your finger. I wouldn't have a Hoffman frame for extracting.

Dr. Miller: How many prefer the Hoffman? And count the number.

Mr. Gray: I have had some experience and it is very good, but I would advise them to get two colonies of the best bees and all the good papers published. And as far as the Hoffman frame is concerned, it would depend on the locality. We have a good deal of wax, and I consider them the poorest. There is so much wax you break them all to pieces getting them out.

The President: The question seems to be pretty well discussed on both sides. We will have a rising vote on the preference either of the Hoffman or others.

Those in favor of the Hoffman rise.

Those in favor of the Hoffman numbered seven and two halves.

Those that prefer other frames rise.

Those in favor of other frames numbered seven and two halves.

The President: It is equally divided.

Mr. Kildow: How many of the beekeepers have the frames they started with and thought they were right first."

How many in the room have the same frames they started with the first time and think they are right?

Mr. Moore: I can say I do, and I have used them five years.

Mr. Becker: I have the same frames I used thirty (30) years ago.

Mr. Moore: Only experience I had before that was when my father kept hives in the American frame, but since I have been keeping bees myself, since 1903, the last five years. I started with the Hoffman frame. I have thirty (30) or forty (40) of the Danzenbaker, but I prefer the Hoffman.

Mr. Lee: I started in 1862 and I have the same frames.

Dr. Miller: I started a year sooner and I have had seven different frames.

Mr. Spracklen: I started in 1882 and I have had five different frames since that time but I prefer the Hoffman. I have had the American and New Ideal and other patents, also the Improved Simplicity, but I prefer the Hoffman.

Mr. Werner: I started in 1887. I used the Simplicity but it was so weak. Since I started the Hoffman I have always used it. Don't have to keep the frames apart to keep them from jolting together.

Mr. Poindexter: I have used one size frame, that is, since 1870. I prefer that. I like a large frame. One of the main reasons why I like a large frame it is much easier to keep. I have had some other frames in use and they require sometimes two or three (2 or 3) times as long to find the queen as in a large frame. That is the reason why I like a large frame. I use about a twenty-inch hive. Twenty inches long. Sometimes near eighteen or twenty inches long and nine inches deep or ten inches deep.

Question No. 7.

What are the prospects for white clover next season?

Mr. Kildow: Putnam County is very slim.

Mr. Holekamp: That is a question of locality. Probably in some localities it is dried out.

Mr. Hyde: I put that question in myself. Some might have honey we wouldn't sell we might hold it over, especially our extracted honey.

Brother Dadant does that and he gets good prices for his honey. I would like to know.

Mr. Hutchinson, of Michigan, thinks there won't be any white clover.

Mr. Holekamp: I would answer that there is considerable honey left from last year. I know of a party that has one thousand pounds and there probably will be a good deal this year.

Dr. Miller: That is an important question, and getting the view of each one.

I think a vote—how many think the clover is badly hurt and how many not—would be a good thing. I should place a great deal of confidence in that.

In my locality, while the drought is very severe, there will be plenty of clover next year. Plenty of roots left for plenty of clover next year.

I wish you would ask how many men in the locality think the clover is injured and how many not.

A Member: Christian County has ten thousand acres of clover, and if half was killed there would still be plenty. On the light soil it is injured but on the dark soil it is not injured. But even if half of it was killed we would have enough to have a big honey-flow next year.

Mr. Stone: We have a member of our Association that I saw at the Farmers' Institute at the Arsenal. He lives a few miles south. It is Dr. Southwick. He told me he had twenty or thirty acres of Alsike clover, and I insisted on his being here at this meeting and he was going to bring samples, and I still hope he will be here. He encourages the bringing in of the seed by paying the freight and giving his neighbors the seed at the original cost, and he gets a good many to sow that way. He said his bees had all the range they wanted of Alsike. He only had about one hundred colonies.

Dr. Miller: I would like very much a vote on this question.

How many think clover is hurt for next year?

Mr. Spracklen: The south part of Shelby County is very slim, but on investigation over fields you will see there are little sprays, but it looks very sickly.

In regard to the Alsike I would say it is very much trouble to get it to propagate. Quite a good deal was

sown but it doesn't take hold on the soil.

Mr. Stone: Takes hold more readily than the red clover. This same Dr. Southwick said the red clover didn't do well but the Alsike did.

I think the white clover is just like the blue grass. The tops are dead and the roots are all right. I think we will have just as big a clover crop next year as this year.

And that is the way blue grass spreads. It will spread if you don't let it seed; and the white clover spreads by running on the top of the ground and has a knack of lying dormant during dry seasons.

Mr. President: All members who think there will be an average crop of white clover may rise.

Those thinking there would be an average crop of white clover numbered ten.

Mr. President: Those who think different will rise.

Those who thought there would not be a good crop of white clover numbered seven.

Mr. Pyle: There seems to be an impression that a sprig that is spotted that that will grow. A common farmer will tell you when clover comes up and dries it exhausts the stock. The seed must come up one spring and you get the good of it the next spring. But if your plant got fully matured it will stand drought.

Red clover or Alsike or sweet clover when it goes to seed the next year it will die.

Mr. Stone: Are you sure white clover is biennial?

Mr. Pyle: Yes, sir.

Dr. Miller: It is a creeping plant like a strawberry. Those are new plants then. If there never was a seed allowed to grow I would be sure my white clover would go on.

The red clover is a biennial. There are a whole lot of roots every year. Where it strikes there is a new root.

Mr. Moore: I think there are two varieties of white clover. In my locality there is a single-root white clover. I have been very much bothered by this running white clover. It spreads out a yard from one root. But the white clover we get our honey from is a biennial.

We had a good season and they grew well. We didn't have any dry

weather till July. And I think they got thoroughly rooted. We had some rain in August that started the old white clover and also these new plants, so I think the next season we will have an average yield of white clover.

Mr. Stone: I want to differ with him and agree with Dr. Miller. I don't believe there is but one species of white clover. If you allow the crab grass plenty of room it will spread from one root. If it is crowded it grows straight up, and I think white clover is the same way. It is not so bad in the field to run as in the garden where you have every weed out.

During our Chautauqua I have a terrible fight after I get home. If a plant has plenty of room it will send out ten thousand shoots. It takes root at every point and you couldn't cut around a space as big as a foot and get it out, for here are the runners rooted and you can hardly pull it out. You will never have a single runner, I think, if white clover is allowed to run; it will run all over the ground. I think white clover is never killed unless in May. I have seen it when it was abundant in the fall, and would be up half a finger length the next May, and come a cold spell in May and it would be killed. If it comes from seed the year before and goes through the winter all right, in the spring when it begins to grow it is a very tender plant. I believe all the clovers are a little that way.

We always thought we had to sow alfalfa in the spring, now they sow it in September. They don't have the grass to contend with as if they would sow it in the spring. If they cultivated it and kept the grass down till in August the grass is not apt to bother.

The year after the Columbian Exposition at Chicago we sowed a patch of alfalfa in early May. The weather was fine and it was soon up two or three inches high. At the same time white clover was coming thick everywhere (red clover, too) and there came a freeze and killed them all, so that there was no white clover that year. Our alfalfa we sowed again and got a good stand.

I have seen it occur the same way three successive years.

Mr. Holekamp: I think it is with white clover as with alfalfa, it is as to the soil. I have sowed bushels and bushels with my own hands. I have

never succeeded in keeping any alfalfa till the next spring. And I think it is a good season in this locality for it and clover, too. The soil is rich but loose.

Mr. Stone: Is your soil loose?

Mr. Holekamp: Yes, sir.

Mr. Poindexter: Did you ever see bees working on alfalfa?

Mr. Stone: Yes, sir. But only two or three. But some insects do work on it so it produces seed.

Mr. Kildow: I want to disagree a little with Dr. Miller. In my experience the clover doesn't come up and propagate like a strawberry plant, but it will root and keep going. But late in the fall you can take that same seed plant and pull it all out; strawberry plants you can't do it. But this white clover in our neighborhood it will come up and draw out, it has blossoms, but when the season is over you can pull it out.

You have to have this spring's clover to make next year's honey. It is so dry I am afraid all our clover is gone. We have a little place but it will hardly give the bees a taste.

Mr. Becker: In 1883 I was living in Christian County. There was an old man, and me and him worked together with the bees. We had a very large crop of honey that year from white clover. I said, "Uncle, I don't think there will be any trouble, but we will have white clover all along." He said, "Billy, I have lived longer than you, we will not have any white clover at all." It comes and disappears and about the only thing that kills it is a dry fall, and then it freezes up; you won't see any next spring. That is my experience with the white clover in my locality. I have a lot in the hog pasture the hogs run in. It was solidly covered with clover this spring, three head of hogs in there, and if we get a rain now before it freezes up it will be all right, but if it closes up without any rain we won't see any white clover.

Mr. Spracklen: In regard to the two different kinds of white clover, if any of the brothers will call I will show them in my apiary two kinds of white clover. One kind runs along and comes up, which is our real white clover. Then I have another kind in my apiary. It is about that high (indicating the height), and spreads out.

Mr. Stone: You take the white

clover and it has a little white streak, heart-shaped, on the leaf, and the Alsike leaf is plain green.

The white clover has a single stem from the ground for each blossom, while the Alsike branches out like red clover, and has a purplish white blossom, similar to white clover. I think these are your two kinds of white clover.

Mr. Moore: I have had them grow in my strawberry patch and in cultivated soil where it had every opportunity. This one variety has a creeping habit. The leaves and blossoms are small, and not far from it is the other variety. It had plenty of room. That would grow up and stand up a foot high.

Mr. Stone: Single stem?

Mr. Moore: Yes, sir. It would come up and would have big roots and a big bunch of leaves a foot across. This other variety wouldn't stand up but two or three inches. This is the regular field white clover. Where it is crowded in a blue grass stand it wouldn't grow so.

Mr. Stone: I suggest that we go back to the programme and have Dr. C. C. Miller give us a little talk.

Dr. C. C. Miller: I don't know that I want to make a speech, but if I did I would say a few words about the space in raising bees and see whether we are not making a mistake.

We know there are some advantages of having considerable space during the swarming season. If we can have good ventilation below we can keep down the swarming, if there is a good amount of space below where they are. But in the cellar for the winter it is easier to keep the interiors clean, and if they are out doors the dead bees accumulate there and we have trouble. If we go to having too much space under the bottom bars, then we meet with the trouble that they will build down comb. The question is to get all the advantages and keep clear of the disadvantages. I think it is an entire mistake to suppose that bees will build down in a space that is only a little larger than $\frac{3}{8}$ of an inch.

Lately I read an article in the Irish Bee Journal where the space underneath was three inches. For three years he had that bed and there never has been any comb bed bars.

So to begin with, we begin in the

first place with having too small a space under. I have $\frac{3}{8}$ or one-half inch.

In the next place, if we can have a large space in the winter time and a smaller space in the summer time. We can get that by a reversed bottom. But I wouldn't have one now because I can do better. If I couldn't do any better I would want the advantage of that deep space.

There is a man in Ireland that has three or four inches space. He may have a reason for that depth. But I think two inches space in the cellar in the winter time is enough. I have good results and I don't want to reverse them. It is a heavy business, so I have that two inches depth in the winter time. In the summer time I put something under to partly fill it. In the first place, I put a little box in there, a common box made of light thin boards, turn it upside down, I think edge down, you turn the front, then they each now have just a little raise.

Suppose you take a piece of wood half an inch thick running across, it has one at the front end and one at the back end, and it would have strips about $\frac{1}{8}$ of an inch thick to nail on the upper side. Then on the under side the same thing, only laying the joints so that the bees will have plenty of chance for air to go up through there. There will be two runners down under it to support the whole thing. The upper part of the surface will be within an inch of the bottom bars.

There is scarcely anything in there and yet the bees will never build down. That surplus of thin wood you can pull out in the winter time very much quicker than reversing them in the summer time, and I have the advantage of the same space without the disadvantage of the building. Now, if I can have all that space and the advantage of it aren't you making a mistake by having a board within an inch or half an inch of the bottom boards?

Maybe some one would like to ask a question.

Mr. President: Maybe, as Dr. Miller suggested, they want to ask some questions.

Mr. Stone: Mr. President, we have a paper from Mr. N. E. France, of

Plantville, Wisconsin, subject, "Better days."

Paper read before the convention by the Secretary.

Better Days.

Bee-keepers have long ago become accustomed to live largely on hopes. Next season to be better, next winter to have less loss of colonies, better methods, better sales and all kinds of hopeful dreams. But we are now living in much better days than but a few years ago. Compare present methods with our youthful days, and what advancements in everything except the market price of honey. We must compete with standard foods on the market, while but a few years ago honey was considered a luxury, to be used as such, and price according. Today honey is recognized as one of the standard and cheapest daily foods on the every-day table. Methods of handling bees with less cost of production is demanding our attention. Let me give you what I saw lately in one of Wisconsin's apiaries. Owing to overwork in factory this man has to resort to methods of bee-keeping with easy methods. He uses a wheelbarrow to move all his supers from apiary to bee house. Uses queen excluders between brood chamber and supers above. No brood in sections or extracting combs. Also uses the bee escape boards to remove the bees from supers, saving hard labor and keeping the bees free from disturbance, which means good-natured bees.

This is proven, for he lives adjoining a large school yard where over 150 students are at play near the bees, and no one yet stung. By his own make he has the best lifting device I have seen, for by its use he, with left hand, lifts one or more supers, to place under the excluders or will swing raised supers around over wheelbarrow and easily let same down on to a non-drip box; wheels same into bee-house without once lifting except handles of wheelbarrow. In bee-house he has another equally easy method of hoisting all supers upstairs and so placed that the same oil stove heats air under the supers until extracted. This oil stove also melts all cappings as fast as taken off, leaving nice wax cakes in the pan below. It also keeps hot water for uncapping knives to be in when not

in use. The extractor runs by gasoline engine, the honey as fast as extracted runs at once from machine below into storage tank, all strained. All these modern improvements cost him but little, and makes it possible for him to handle twice the number of colonies with half cost of production. He can thus produce honey much cheaper as well as easier. At Detroit was several new appliances, some valuable. The new five-gallon jacketed can for National members for 1909 I have improved so with three-inch screw top off every drop of honey will drain out. Easy to melt honey in also by removing outside jacket. I am also planning in near future to supply a good section box for less cost to producer not made of wood or tin. Uncapping machines are already in their infancy, only waiting for little improvements before in general use. Surely, you will say better days are at hand and we must be up to date, as these things demand. Another thing we have sadly neglected is proper selection of drones for mating queens. I wonder some who sell queens can hope to sell good queens with common stock in same apiary or near adjoining. We well know the importance of selection of sire in farm stock, yet we have planted same small potatoes for years, and used any kind of mated queens for generations with bad results. One more thing of valuable importance is the getting rid of the dreaded bee diseases. Methods have proven how to safely treat each disease, and almost every up-to-date bee-keeper is carefully getting rid of diseased bees. We yet have in the several States, including Illinois, many bee-keepers who let their bees take care of themselves, and if disease gets among them and several colonies die and are robbed out by neighbor bees whose family support comes from the bees. In Wisconsin we have a good law that empowers the Bee Inspector to inspect any apiary and ascertain whether or not such disease exists and give the owner instructions how to treat them. Illinois law lacks the most important part, that of legal right to inspect, and if apiary is diseased to compel its treatment. Think of having a Sheriff without authority. I in Wisconsin have had several times disease imported from Illinois where Illinois Inspector could not lawfully inspect or treat said apiary. If nothing else of import-

ance is done at your annual meeting, I do hope you, every member, become one of committee to personally see or write your member of Illinois Legislature the need of amending Illinois law giving him authority. Your state recognized in appropriation all the funds asked for—to eradicate bee diseases, and then left out the most important part of authority of Inspector. We must have healthy bees and then the modern methods will make bee-keeping one of the greatest of agricultural industries. Many States have laws on bee diseases and every State except Illinois gives its Inspectors legal authority. Surely Illinois, with 34,932 farms with 179,953 colonies of bees, producing annually 2,961,080 pounds of honey, worth \$350,000, is worth protecting. Unitedly you can get this needed change in Illinois law. Will you do your part?

Yours truly,

N. E. FRANCE,

Bee Inspector 12 Years of Wis.

Mr. Moore: There is one thing I want to bring before the meeting in regard to our foul brood law. We have a good law as far as it goes.

The general run of our legislators have very little idea what bee-keeping is to this State.

I was talking to the Honorable E. G. King. We were speaking of my crop of honey. I told him I was going to the State Association. He said, "They appropriated one thousand (\$1,000) dollars," he said, "What is that for?" I told him of our foul brood law; I told him it was good as far as it went. If the foul brood law was brought up with this man sitting there he would know what it was. If I could go before every member and tell them about the foul brood we would have a better law.

I am going to see Honorable E. G. King again and also Senator Hereford for a compulsory foul brood law, and we could have one that an Inspector could go ahead and clean up a foul brood apiary as well as a Sheriff.

Mr. Becker: Last fall I was down in Southern Illinois. I visited in Edwardsville. We went to see Representative McGrath, from Madison County. He had the year before five colonies of foul brood. He was a jolly good fellow and a farmer. Mr. Werner was well acquainted with them, and he was along. He said, "Go look at

them." He said, "Werner, I ought to have done what you said and there would be some more left." There was only two colonies left. He said, "What did you fellows come after?" I told him we understood he was again running for legislator and we wanted his assistance if he was elected. He said, "I am a candidate and I will be elected." He said, "If you come up, if you want a law" (I explained it), he said, "I will help you, I will do all I can, and more than that, I know the benefit of it. I know what it is. Last year I didn't know." But he promised us if our committee comes before the Legislature, "Come up and see me and I will work among my Democratic friends."

They say he got more bills through than any other Representative of Illinois. And he promised us faithfully that he would try to have a compulsory foul brood law passed.

Mr. Holekamp: How will you get any bill passed that will benefit the farmer?

First our Governor vetoed it and the second time he signed the bill.

Our Association gave me the power to do what I wanted to do.

I sent a circular calling the attention of every bee-keeper for having such a law passed. About the 26th of December I mailed to each member of the Legislature and the Governor a circular that a bill would be introduced, and describing the nature of it, and stating how necessary it was to have this bill passed. That the bee-keepers wanted it and it was needed. Calling attention to the fact that we have in Missouri forty-five thousand bee-keepers in charge, I think, of two hundred and sixty thousand colonies.

One of the first bills introduced in the Legislature was our bee-keepers' bill.

I sent a letter to a Senator who was a Democrat, and a Representative who was a Republican. Then I asked all these bee-keepers to write to their Senator in the House to support this bill.

I went to Jefferson City and button-holed every member of our Legislature I could get hold of.

I took five boxes of foul brood, the worst I could find. I went before the house and they recommended my bill.

The Senate Committee I did not see

because I spoke to the Senators at the hotel and showed them the foul brood combs. My bill passed without any change.

It was a bill which was not of any personal interest to me, and therefore I did not have to be examined to speak for it.

They asked if I would be Inspector. I told them if instead of two thousand dollars a year they would give fifty thousand dollars, then I would have a deputy in every county, otherwise I would not have the job.

After the bill passed the second time I went to see the Governor.

I had written a good many letters, always making them personal, so I think he was familiar with what we wanted. Our bill was passed and signed.

Then I looked around for an Inspector. I found the man I thought we needed. I asked the State Board of Agriculture to appoint him. He was appointed and is doing good work today.

The thing is not to make this bill political, not to have any politics in it whatever. It is simply a law that the farmers and bee-keepers need.

When I spoke to a legislator they didn't know whether I was a Democrat or a Republican, and they said, "I have heard from home, too." Everybody was glad because I went to all of them.

I think there will be no trouble if you will show the legislators there is no politics in it, but that the farmers need it.

Mr. Smith: In that line I have had some experience. At the last four meetings of our Legislature I was chairman of a committee to pass that bill and we have never succeeded in getting it out of the committee. No doubt if it had been recommended by the committee it would have passed. But the stumbling block with this legislature is they will not pass any more bills that will give the Governor any more political advantages in the matter of an appointment.

If our bill was so changed that the Bee-Keepers' Association should appoint some one to act as Inspector there would be no trouble, but when it comes that on the recommendation of the Governor, they are opposed to any more power of the Executive.

Mr. Holekamp: We asked the State

Board of Agriculture to appoint one. I didn't want to ask him to appoint any one political man, Democrat or Republican.

Mr. Smith: When we go before the Legislature this winter again we want to ask for the appropriation in a separate bill, so we separated them and they have never refused it, but when it comes to making a new political office they oppose it.

Mr. Moore: I suppose it could be worded so the State Association could appoint him. We have to have a man that knows all about foul brood. I should think he would rather appoint some one the State Association selected. In framing our bill we must be careful so it will be accepted and at the same time to have the effect to do the work. I mean that all political influence is out of it. That is what they oppose, the political part. Mr. Stone, would you say it is so framed it ought to be changed?

Mr. Smith: Yes, sir.

Mr. Stone: The Attorney General framed it.

Mr. Smith: They said, "We will not vote for a bill that will give the Governor any more political power. The Chairman of the Senate told me so. "I will not pass it as it is at present."

Mr. Stone: When I put it in Heinl's hands he said, "If it ain't in the hands of the Governor to appoint we won't pass it."

The Attorney General framed it himself. He said, "You will have to have the Governor appoint this man or he will veto it every time. That other is news to me."

Mr. Smith: This I was told in the committee room.

Mr. Stone: Our bill passed the Senate and in the House was killed on third reading, and only one majority against it. I haven't the least doubt of getting it through without a bit of trouble. But we can't work too much. If we will just go to our members, and inform them as to the nature and danger of foul brood contagion they will vote all right, but they want to know that the law is wanted. And I don't think they will vote us out another time. We don't bring politics into it.

Mr. Becker: I think both Mr. Stone and Mr. Smith are right. I was one of the committee. There is an ele-

ment in our Legislature that is opposed to giving the Governor any more power than at the present time, and that element this time is stronger than ever. The politics made so much fight on the Governor they won't give him any more power than he has, and there is an element in the Legislature that will cut down all they can. Of course, there is another element; they say, go ahead. I see in this morning's paper one concern's busted.

Mr. Pyle: If everybody will do as I did, not holding myself as an example, but wrote to the lower house and Senate and asked them for the passage. The two men of the lower house, Carrick and Ireland, and they both wrote back. Mr. Carrick wrote back and said, "I am a bee-keeper myself and a farmer," and Mr. Ireland wrote and said he would do all he could. And I ask that every person is a committee of one and write to each one of his representatives, and it will pass without a word.

Mr. Kildow: For a while I lived in the same district with a Representative. I wrote to the man in the district of your county. I was personally acquainted with the Representative and the man in the Senate.

This fall I met one of the representatives and I talked to him, and he assured me this; he said, "I don't know a thing about it, but I know what you know is a fact, and I will have better grounds to talk on, and I will do all I can," and I think if everybody will go ahead and do as Brother Pyle and I did we will be only this winter getting our foul brood law.

Holekamp: There is nothing better than to do that, and then send five thousand letters the day this bill is brought up.

When I got to Jefferson City there was a whole stack of letters.

Mr. Becker: Last session, you remember, a certain bee-keeper in the north part of Illinois wrote to Senator Dunlap, but when we told him what a kicker the man was, and that he had yarned, he didn't pay any attention to the letter.

What is necessary is that the Bee-Keepers work together and see their Representative and tell what it is.

This man Inslee spent this last spring fifty (50) dollars stamping out foul brood out of his bees. He said, "I am clear of it now."

His bees are close to a timber. He don't know but that he will have it again next spring. There is the trouble, men that have a great number of bees are fighting this disease, but the fellows that only have a few, they don't care and we can't do anything with them.

Mr. Spracklen: If there can be any good accomplished by going to the Representatives I will see our Representative in my district. He is a neighbor of mine and I am glad I understand it as I do today, and I can go to him, being posted and understanding what it is, and also, if it would be any benefit, I can write to our other man in our district, Mr. McKinley. He is a personal friend of mine. And if it would do any good I can write, but I don't know whether it would have any effect. He is a broad-minded man. I don't do much talking or writing about bees, but I would rather be heard than write.

Mr. President: Has any one else anything to offer on this subject?

Mr. Pyle: There has been some talk among the members that they wanted to see Lincoln Monument. This meeting has been on since 1:30. I move that this meeting adjourn till 9 o'clock tomorrow morning.

Mr. Lee: I second the motion.

Mr. President: It has been regularly moved and seconded that we adjourn till 9 o'clock tomorrow morning, in order that we go and visit the Lincoln Monument.

Meeting adjourned till 9 o'clock Friday morning, Nov. 20, 1908.

Morning Session, Nov. 20.

President Smith called the convention to order as per adjournment of the previous day, and said that the first matter to be taken up would be the reading by Mr. Holekamp.

Mr. York: Owing to the fact that there are so few here this morning hadn't we better take up a question or two till more come in, and discuss the questions?

Dr. Miller: The discussion upon the question box you hear and you catch the meaning better, and the paper that they read, that will be printed in full. I don't know which is better. It is very important that they should be here for the paper and also for the question box.

The President: We have yet to hear from four or five subjects and papers. Will we take this paper or the question box?

Dr. Miller: The paper.

Mr. Holekamp: What advancement has been made in the discovery of the causes and treatment of diseases amongst honey bees?

The subject on which I have prepared a paper is of the greatest importance to the bee industry, since the profit in bee-keeping depends largely on the healthy condition of the colonies.

Our Department of Agriculture in Washington employs quite a corps of workers in charge of apiculture and we have depended to a great extent on the investigations of the department to enlighten us on the causes which bring about the diseased conditions of the apiaries.

It seems, however, as if the experts at Washington are not making much progress in the work of discovering the causes of disease and in finding remedies of successful treatment, therefore the practical bee-keepers must not relax in experimenting in this line and in comparing notes on what they have observed.

The most common disease in the middle and western parts of our country is foul brood, or, as it is now named by the Department of Agriculture, American foul brood.

This disease is well known to beekeepers and thanks to the discoveries of that veteran foul brood Inspector from Ontario, Mr. Wm. McEvoy, is easily cured, if the treatment is undertaken by a careful bee-keeper, and in States where proper laws have been enacted, and the eradication of this disease is under the supervision of efficient apiary inspectors, we may entertain the hope that this disease will be brought under control.

As to the disease of European foul brood, a disease which has been prevalent in the Eastern States and which seems to be spreading rapidly over other parts of the country, different treatments have been advised.

At our San Antonio convention Dr. White, of Washington, informed us that American foul brood was caused by a bacillus which he named "bacillus larvae," while European foul brood, commonly called "black brood," was caused by "bacillus alvae."

At our National convention last October, at Detroit, it seemed as if Dr. White was not so certain about these two bacilli any more, and he stated that no new remedies had been discovered for any disease amongst bees and that all diseases ought to be treated same as American foul brood.

This would leave us the only remedy we have, the McEvoy treatment, or the modification therefrom, the Baldrige treatment. These treatments are based on the theory that the bees must either be compelled to empty their honey-sacks before feeding any larvae or storing any honey in the hive into which they have been transferred, or to be caused to leave the diseased hive with an empty honey-sack and to enter the hive to which they are being transferred either empty or the honey-sack containing only nectar gathered after they left the diseased hive.

The first condition is brought about in the McEvoy treatment, while the second conditions exist in the Baldrige treatment.

There has appeared in some localities in the western part of Missouri a diseased condition in the apiaries which our Inspector described as follows:

The disease found suits the description of European foul brood almost perfectly, and if it is not black brood it is a very close relation. The combs in this disease have very much the general appearance of the American type but there is generally a much smaller per cent of the dead larvae sealed over and it lacks the ropy consistency of the other. Sometimes there will be a very slight tendency to ropiness, but not very pronounced.

The odor is very different from American foul brood, being that of soured dead brood. It seems to be more contagious, and sometimes does its work very quickly.

In some cases the bees seem to succeed in cleaning it out, and all that will be left in a few cases to show its trail will be a few sealed queen-cells with dead larvae in them. It seems to affect the queen and drone larvae much more than any other disease, the dried down scales do not adhere so tightly as in American foul brood. On sample sent to Dr. Phillips, of the Department of Agriculture, in charge of apiculture, the following is the answer: "It is certain the samples sent are not American foul brood. There is a possibility that the trouble is European

foul brood. That disease is extremely difficult to diagnose at times, but certain things about your sample suggests it. The matter will be investigated next spring."

Investigation must show whether European foul brood has taken a jump to this western country, or whether the disease will disappear as it came, suddenly and unexpectedly. I will now give my personal experience with a diseased condition found in my own apiary and in other apiaries in the vicinity of St. Louis and which our Inspector has also found in other localities.

Last spring and early part of summer I discovered in a number of hives dead larvae, in some hives more, in others less. The dead larvae were entirely different from the way they appear in foul brood.

They were generally white or grayish and watery, not ropy, and had no odor, neither were there any dry scales.

I showed an infected colony to our Apiary Inspector and we then went together through my home apiary of about seventy-five colonies and I noted the condition on each hive as we went along. Later I accompanied our Inspector on his visits at apiaries in the surrounding country, and the same conditions were found, here and there a hive with dead larvae as described before in otherwise healthy apiaries.

I concluded to make some experiments. One colony which I had noticed the year before as not making any headway and had marked "suspicious," but which last year showed only a few dead larvae and no symptoms of foul brood, I treated on the Baldrige plan. When, after three weeks, I opened the old hive, I found every brood cell empty. There was nothing but capped honey and pollen left in the hive and I will mention here that I intend to put a swarm of bees on these combs next spring to verify the conclusion that there was no contagious disease in this hive. When I looked at the combs in the new hive I found most the foundation build out and all brood healthy. A few weeks later, when I had a lot of young queens ready, I went to this hive to remove the old queen and found in the hive the old clipped queen and also a young queen, showing that the bees were superseding.

Another colony which was about the worst affected in the yard I made

queenless and gave it a queen-cell, which hatched and gave a young queen to this colony. I sent a sample of comb from this hive to Washington, but when it was seen by Dr. Phillips in California, to where it had been forwarded, it was reported as being mouldy.

I will give the condition of all these affected colonies a month later when a big flow was on. Not a dead larva to be found, all colonies working nicely. Several colonies which had shown considerable dead brood gave me two hundred pounds of extracted honey each. At the end of the season I had extracted from this apiary ten thousand pounds of honey and made artificially a large increase.

Two years ago a bee-keeper on the Mississippi River, about thirty miles from me, who had about a hundred colonies of bees, requested me to come and look at his bees, that they were badly diseased. This bee-keeper being located off the railroad, probably a month or six weeks expired before I was able to see him. When I came there he told me that he had treated his bees to a drenching with a disinfectant which he used at his poultry houses, and that his bees seemed to be better now, but that there were two hives which had not been treated, which were the worst in the yard, and he hardly considered it worth while to bother with them, as they were so far gone, especially as those bees were awful cross. When I opened these hives there was not a trace of disease to be found, and all other colonies which I opened were perfectly healthy. I wish to mention here that at the time I made this visit there was an immense flow from Spanish needle, there being a slough several miles long close to this apiary which was just yellow with flowers. Our Inspector has been at this apiary this summer and has found it in a healthy condition. When I went last month to the convention of the National Bee-Keepers' Association at Detroit, Mich., I went there with the hope of obtaining some light on this subject. The first man I met when arriving at the hotel was Mr. Wm. McEvoy, just the man I wished to see. I described the disease I found to him and he exclaimed: "Starved brood, nothing but starved brood." I mentioned there had been plenty of honey in the hives where the dead brood was found, and Mr. McEvoy's explanation

was that often bees will not uncap honey fast enough to feed the larvae sufficiently, consequently the dead brood.

He described just what I had often noticed, very small young bees hatching from the cells and crawling slowly over the combs, seemingly too weak to move. Mr. McEvoy suggests as the remedy to uncap honey in the combs. To this I would add that feeding of syrup, if practical, might be resorted to, but that probably the requeening from stock which will feed its larvae abundantly would be the proper way of remedying this condition. If next year the trouble as described should recur, which, however, I do not expect, as I requeened this year most of this apiary, I will be particular to raise queens from a colony which feeds its larvae plentifully and expect to overcome the difficulty in this way, and I would suggest that bee-keepers who have noticed the same conditions in their apiaries would experiment on the same lines. I hope that the disease found by our Inspector and suspicioned as European foul brood may turn out to be what my bee-keeping friend on the Mississippi River found in his apiary two years ago, but as the disease described by our Inspector was prevalent during the later part of the season, careful investigation will be necessary.

The dry season may have stopped the flow of nectar and caused the bees to feed the larvae scantily and this may have caused the brood to die in the combs.

There is another disease amongst bees of which there seems to be very little known and for which different remedies have been suggested. This is bee paralysis.

I have had, off and on, a few cases of paralysis in my yards, but never tried any cure till the season of 1907, when I had about six cases in my home yard which seemed to be rather bad. I looked over all literature at hand and wrote to the apiary experts at Washington, D. C., but could not get any information. The only suggestion given me from some source was to requeen.

I went to a hive with Italian bees which seemed to be the most afflicted and removed the queen, intending to kill her, but she being such a fine large queen I hesitated, and then it just occurred to me that there was a good

chance to experiment. I therefore took from this hive a comb with a little brood and honey and a handful of bees, and put it in a hive with the queen, and carried this hive in the lower part of my yard, about two hundred feet away from my other bees. The colony from which I had taken the queen was supplied with a young queen.

During the honey-flow paralysis disappeared and the afflicted colonies gradually recuperated.

Now, in regard to the queen which I removed from the most affected colony: The little nucleus built up during the summer strong enough that I could winter on its stand on three combs, which were packed in well all around with carpet and cushions filled with leaves. This spring I assisted it with a frame filled with capped brood and honey. The colony built up very fast during the summer and produced one hundred and fifty pounds of extracted honey, and goes into the winter in a ten-frame hive extremely heavy with honey.

What does this teach? That the queen is not the cause of paralysis, and therefore requeening is unnecessary if the queen is otherwise perfect.

It seems that the cause of paralysis is to be found in the food contained in the hive, as the disease disappears when a good flow comes on.

The remedy might be to remove the honey contained in the hive and to feed syrup in its place; where the brood is in the same comb with the honey this is not always practical, but where the honey is contained in the side combs and brood in the center combs the removal of the honey might be resorted to, at least, it is advisable to make experiments on this line.

Rob't A. Holekamp,
Secretary Missouri State Bee-Keepers'
Association, St. Louis, Mo.

Mr. York: We have a couple of questions on foul brood.

Question No. 7.

Does foul brood show the same peculiarities in the different States?

Dr. Miller: I should say in the main, yes, sir. There is very little difference. The reports from all over are very much the same.

Question No. 8.

Is it possible for foul brood to orig-

inate from brood drawn from a late brood, after the worker is gone, leaving the brood to decay?

Dr. Miller: Foul brood originates only from the bacilli, but some one or another is the cause. In other words, the disease is caused by the growth of a microscopic plant, and unless the seed is there the plant won't grow.

Years ago it was claimed that brood dying would be the cause of the disease, without there being any disease anywhere around. But you must have the seed before the plant will grow. And unless there is the infection from some other place, no matter how much brood you have, you can't have foul brood.

Mr. Stone: Is it a seed and not a living germ?

Dr. Miller: There is a seed from which the living germ grows.

Mr. Stone: Is it a plant and not an animal?

Dr. Miller: Yes, sir, it is a vegetable. It is a living germ, and I think your error is a common one, and I will confess that for a long while I had the same idea, that the bacilli was animal life. It is not, it is vegetable life. It is a little plant that grows.

Mr. Stone: It is not animal life?

Dr. Miller: No, sir, but vegetable life, something like mold.

Mr. Stone: It never flies in the atmosphere, only carried in the honey?

Dr. Miller: I don't know. If it were to fly in the atmosphere, because it takes very little to kill. The spore will live. That is the seed. Take the spore and the bacilli, it is very much like the grain of corn and the corn stock. The spore is very hard to kill; it will stand boiling water for a while, but the plant is not hard to kill.

Mr. Lee: Do you think it the same under all conditions?

Dr. Miller: Certain conditions make this. You may have a colony that has foul brood, and if conditions are favorable to it they will increase very rapidly, but if conditions are unfavorable, if you have a good flow of honey in the colony, your bee-keepers report the disease disappears entirely.

Mr. Holekamp: Dr. Miller's remark creates the idea that it is American foul brood.

Dr. Miller: It is very important that you have your colonies in the very

best condition and strong, and then you have the better chance to battle with the disease.

Question No. 9.

Which is the better for producing extracted honey, a full story or a half-story?

Mr. Stone: Mr. President, nobody seems to want to answer that question, so I will say what I think.

I don't think it is wise to put on a full story to extract honey till the hive needs a full chamber. It is better to let the brood get full enough till the bees demand a full story. If I want to get comb honey I go to the hive not strong enough for a full story.

Dr. Miller: While that is true, the nature of this question, the mind of the one who gave it, is it better for me to have shallow or deep frames? Unless it is strong enough to require room, as much room as a full story. That leaves still the question, had I better have the two shallow stories or the one deep one? There are arguments on both sides.

In the first place, I would rather not have two kinds of frames. It is a great deal more convenient to have one kind of frame. On the other hand, if I have the shallow frames for extracting, and go to the expense of having a set of extracting frames, I have this advantage, if you have a deep frame, when you take that off when it is partly filled, the other portion will be sealed up and that is the lower part of the frame. If you could cut that in two and could have the sealed part and leave the unsealed part there.

The shallow frame gives you the advantage of having it sealed all at the same time better than the larger frame.

If I would think of beginning as an extracted honey man I would find out what good extracted honey men were doing, and I would go by what C. P. Dedant does, and he uses the shallow frame for extracting.

Mr. Stone: I would like to add a word. It would be different if anyone is going into extracted honey especially and not any comb honey. It would, of course, be all right to have the shallow frame and deep frame, too. The bees would fill up the shallow frames and you would have to extract your honey or put more cases under each, and I think it would be a great deal of trouble, whereby you could facilitate

that by using both size frames. It might be all right for them to have both sizes.

Mr. Stone: For explanation to our members I will say, they see our Treasurer going around and seeing him paying some money. The Executive Committee have been authorized to select parties for papers or speeches and pay their railroad fare here and back, but they pay their own hotel bill. And when an association is affiliated with the Illinois State Association we pay their delegates their railroad fare.

Mr. Moore: This subject of shallow vs. deep frames for extracting supers. The bees are rather slow to go into the deep frame, it gives them so much room to swarm; they will go into the shallow frames and work quicker than the deep frames.

I would rather handle two supers of shallow frames than one super of deep frames. You can handle two supers of shallow frames easier than the deep ones. I never monkey taking one frame at a time. I want to take the super off and put another under.

Mr. Stone: I go with my wheelbarrow and a box I make to handle the brood frame size; they are emptied and put back into the hive for the bees to empty or clean up as they see fit.

I take out two or three of the frames on the stand and I keep placing others in. I take a brush and brush the bees off.

Mr. Moore: In a very short time you will have your entire yard in uproar (except during honey-flow you don't notice it). It is a considerable job to brush the bees off; you carry more or less into your honey-house, anyway. I like the escape board. I simply go up and pry up the supers and slip the escape board under, then the bees get out.

Dr. Miller: I would give this same reply to a beginner. I think to a beginner I would say use deep frames mostly to start with and a few of the shallow frames. That will give you a chance to try the two side by side. And I will tell you why you had better take mostly deep frames. You will need time and possibly will need those frames for brood chambers afterwards, and if you decide to use the shallow ones you can, or if you decide to use the deep ones you will only have to

throw aside a few of the shallow ones. So mainly commence with the deep ones. The probability is you will want to use the shallow ones afterwards.

Mr. Moore: Please consider an argument on the divisible brood chamber.

I expect next season to try it. I don't know whether it will work in my locality. Some of our leading beekeepers keep it and they think it is very good.

Mr. Stone: In advising a new beginner I would say just how I did, because that is the only way I know. I wouldn't advise a beginner to begin with extracted honey. Take hold of extracted honey when they are educated in it.

When I began I began with comb honey, and not any more than we used in our own family. When I saw the advantage of extracted honey I gave my customers some extracted honey, and now they don't want any other kind. Sometimes I get a customer that wants some comb honey and I start them with that and extracted honey, too.

Mr. Holekamp: We always get a number of combs which have drone cells in them, especially where a person buys bees and in that way get a good many cells with drone frames. Those frames can be removed and used in the extracting super, and in that way we get our brood chambers in much better condition than if we didn't have those frames. All those not to our liking we can set upstairs and it makes our other frames in the brood chamber much more even, and I consider it much of an advantage.

Mr. Spracklen: That is my question. And I have been reading the bee books and journals, and I saw the records of the two supers for extracted honey, and as I work for both comb honey and extracted honey it was a question whether I would use deep and shallow frames together, and I am fully satisfied at the present time from what I have heard from the brothers here that I will not change to the shallow frames. I have more call for extracted honey than for comb honey.

Mr. Becker: I believe I sell about as much extracted honey here in Springfield as anyone. As to the frames, I prefer the shallow frames. I don't ask anybody who wants to use

the deep frames to use the shallow, but I like them.

Mr. Stone: Did you ever use the deep frames?

Mr. Becker: Yes, sir. I have one hundred right now. They are too much hard work for me to extract. I take a shallow one and my honey knife and go clean through it and with the other you have to take another cut and they are never as evenly filled as the shallow. I had in the neighborhood of twenty-five hundred of comb and thirty-three hundred pounds of extracted honey. I just got through day before yesterday. Last week I extracted about fifteen gallons.

During these two warm days it looked like the month of July, and the bees were just swarming back and forwards. Some acted like they were swarming, and cleaned it all up. I sell all my honey in Springfield. I shipped a little by order. Shipped eighteen gallons to St. Louis and twenty gallons to Chicago to friends of mine.

I have a ready market for it in Springfield. I put it up in jelly glasses, ten cents retail, another fifteen cents retail, another twenty cents retail, and another at twenty-five cents retail. One glass and three bottles.

I met three different dealers in Springfield this fall, and I guess in at least one-half of the stores in Springfield, grocery stores, you can find my honey. One man came in from Jacksonville and sold a little. I found it in three stores. That is the only extracted honey I saw with the exception of a little brought from Cleveland, Ohio, and I sell it to parties that stock up and take eighteen dozen at a time.

Mr. Poindexter: Can't you extract just as quickly out of a large frame and handle it just as quickly as a small frame?

Mr. Gray: I work for both comb and extracted honey. I use the shallow frames. I use both but the deep frames are a little heavy to handle for us old fellows. I have shallow ones that go into a four and one-third super. I use about a six-inch frame. If we leave the honey on the hive till the season is well over my experience has been that the medium deep frame is better for old people to handle. It is much easier to handle. It is much easier for me. And as to the divisible brood chamber, I put some on those narrow

frames. I think they will work all right. They will build up much quicker in the shallow frames than in the deep frames.

Mr. Stone: Mr. President, that question of beginning to work smaller frames is figured down to the strength of his swarm. The deep frame is not too big a space in a good honey flow and when your swarm is good they will find it in a week. If you leave it till this time of the year you don't need a bee escape. Take out some of the frames; there will only be a few bees; brush them off. If your colony is not strong it had just as well put in its time getting so, and not give it any surplus room.

If I believed in the small frames I would handle one-pound sections.

Mr. Moore: I think our depth to the shallow frames is five and three-eighths inches.

Dr. Miller: Or six-inch frames?

Mr. Moore: They are full five and three-eighths inches. Dadant's are a little deeper than that.

I think the bees will go to work quicker and fill up quicker.

Mr. Becker: The way I do—it is true I haven't got as many shallow frames as I did have. I had three years ago this fall I had enough for three stories for one hundred colonies, but now I have to run them up in beeswax. The bees died and I haven't as many in the spring of the year.

My hives are ten-frame colonies. As soon as they begin to work in the spring I pick out the shallow frame with one super on each hive and that saves them from the moth getting in, and they start gathering honey in June. When white clover comes in these hives are all full of brood. My hives in the lower chamber are full of bees. That super is full. If I want to run them for extracting I put in more supers and a queen excluder. When the bees are attached I put a queen excluder in and keep the bees below, and I think I get more young working bees in the colonies than by putting on your large frame.

I don't want the large frames for surplus honey. I put on only an eight frame. When I want to use the large frames the comb is too wide. That is why I prefer the shallow frame.

Dr. Miller: I think this question

has gone far enough, but if we can get the opinion of those who have tried it and have decided a shallow frame is better for me or a deep frame is better for me, then we have the weight. I think when we have gone so far it is better to take a vote.

The President: I think we have discussed this question and got all the substance out of it. Now we will vote.

Those preferring the shallow frames will rise to their feet.

Those preferring the shallow frames numbered seven.

Those using the deep frame for extracting will rise to their feet.

Those preferring the deep frame numbered three.

Others did not have a decided choice.

A Member: Now, Mr. President, call those half way. Those that use the shallow and deep or medium. I use a ten-inch frame with a shorter frame.

The vote on this proposition was seven to three.

The President: More are in favor of the shallow frame.

A Member: Yes, sir.

Question No. 10.

Will bees put out on a cold day fly out immediately or wait till a fair day?

Dr. Miller: It depends on what you call a cold day. Suppose you put them out when it is about forty-five degrees, and the sun shining, and still those bees very much in need of flight will not fly if they are not badly in need of flight; they will not fly unless very much in need of it.

Question No. 11.

Is there not some way by more united action of honey-producers to receive a better rate on honey?

Mr. Bowen: I think most bee-producers asked for that in the National.

People will readily pay from thirty to forty cents a pound for butter and other matters of table use that isn't any more serviceable than honey. I think the reason why bee-keepers don't get better prices is because they don't ask it.

I am in Jacksonville and I never sell a pound of extracted honey for

less than twelve and one-half ($12\frac{1}{2}$) cents; here they sell it for eight cents.

There are some there that sell it for ten cents. I know some people are suspicious and still I have seen them pass by those places and pay me two and one-half ($2\frac{1}{2}$) cents more. And I think it is worth it.

If we are going to produce honey at a price that will not pay, the people generally will be on the wing. And there is no use of any good extracted honey being sold for less than twelve and one-half ($12\frac{1}{2}$) cents. And comb honey I never sell for less than fifteen (15) cents.

Mr. Stone: Would you put a rate of twelve and one-half ($12\frac{1}{2}$) cents on all packages?

Mr. Bowen: No, sir. In quantity to the grocer. Then the comb honey, I never sell any of the broken honey for less than fifteen (15) cents, and if I haven't any section honey that won't sell for fifteen (15) cents I put it in broken honey.

In some of the markets it runs down to thirteen (13) cents and fourteen (14) cents, because the bee-keepers don't ask the price. They don't have enough independence. Of course, we have a few bee-keepers that have a good many bees and have a good flow; they actually sell their comb honey for ten (10) cents.

It seems to me we ought to take some steps toward getting better prices for honey.

Mr. Holekamp: As long as bee-keepers will ship to so-called commission merchants and sell it for such prices as it will bring nothing can be done in that line.

I know of bee-keepers that will ship sixty thousand pounds of honey in August from the South to St. Louis and want to sell that honey. I know that the honey could be bought for four (4) cents a pound. I, myself, have sold the very finest honey at five and one-half ($5\frac{1}{2}$) cents a pound simply because I didn't peddle it out and wished to make room for the next year's crop. As far as I understood, they are offering four and one-half ($4\frac{1}{2}$) cents a pound now for extracted honey. That is the biscuit trade.

When there is a large crop of honey and everybody ships it, it is hard to hold up the price. Parties that pay bee-keepers good prices are looking

out, because other parties get hold of this shipped-in honey, and as long as honey is handled as it is now, shipped to commission merchants, the prices will be under set. Unless it is a short crop they will do that. That is what we thought last year, when, in fact, there was a large crop. There is a good deal of that honey in the market now. What is necessary is to create a demand for honey in the whole market and have honey consumed in larger quantities.

In families in Germany they use it all the time. When you go to a hotel for breakfast there is honey on your table. The families don't think they can live without having so many gallons of honey. In this country in the cities they will pay ten (10) cents for a tumbler of honey, and think they ought to buy that only when they have a bad cold.

Mr. York: Recently in my going around and stopping at hotels I have been calling for honey more than I used to. You will find it in more hotels. In the hotels in Detroit during the National Convention they had some of the finest of honey.

Yesterday morning at the Illinois I called for buckwheat cakes and honey and at another this morning. And I think if bee-keepers would call for honey, whether they get it or not, it would induce the restaurant keepers to keep it on hand.

Some one mentioned about bee-keepers selling at a low price because they have only a little, and that that is like finding just so much money. Some bee-keepers don't know the prices.

Mr. Bowen said that that honey is soon out of the way and the little bee-keepers have set the price by setting a low price.

It is a great mistake to allow the small bee-keepers to do that. I know it was that way in Chicago. The dealer needs a good price. He can't sell it unless he gets a fair price. He has to pay hired help. And by shipping to the commission merchants they sell it for what they can get.

This fall in Chicago some bee-keepers told the commission merchants to sell good comb honey for ten (10) cents a pound. That is wrong. They sent it to one market instead of selling it around home, so there is nothing

ing in it for bee-keepers or commission men.

I think there ought to be more care among the bee-keepers to see that it is better distributed, and see that it is better sold at home.

There are some people in town that never see honey, when if they were shown it they would buy it.

Now, like Dr. Miller, he would have to ship to some distant market. But there must be city markets where there is not much honey, and they could be found, and with proper effort, and there would be no overloading on city markets. Of course, Chicago uses lots of honey, and even that can be overloaded, when it comes in by the carload. But I think bee-keepers ought to do something to get the united effort together and to be national. And I know hotels and restaurants are handling it more, and I think if bee-keepers would ask more for it, it would be there.

Mr. Stone: Since the pure food law has gone into effect the commission men are more willing to handle comb honey, but the people will not buy the extracted honey if those men get it.

I had a commissioner come to me one day; he had some honey; it was fresh alfalfa honey. He said, "I can't sell it. I will sell it to you for eight (8) cents a pound." I had paid that for some and paid the freight, too. He said, "I can't sell it." I sold him honey at ten cents. He bought our apples and barreled them, and he and his pickers would bring in lots of my honey, and were not willing to use his nice alfalfa honey "because it did not have a taste of honey."

Mr. Becker has been in town selling it all over. I don't see that he ever struck any of my customers, and I have sold thousands of pounds, and I never sell except on order at fifteen (15) cents a pound. And Mr. Becker's honey is all laid out on that scale.

I weigh my honey and then see what the price is, twenty-five (25) cents, twenty (20) cents, fifteen (15) cents and thirteen (13) cents. He sells in a jelly glass I don't use.

This commissioner, after he held that extracted honey a long while, offered it to me, as I said, at eight (8) cents a pound. I didn't take it. I had all the honey I could use. I said, "If I take it I will have to sell it as my

honey, and if they find I ship it in they won't buy it." The reason why they don't buy that, they don't think a bee-keeper had anything to do with it.

That commissioner said, "They won't buy it because they think it ain't pure. When they go to a bee-keeper it is pure honey."

Mr. Becker is teaching his customers and I am teaching mine, and they come and buy it and look at the bees if they want to, and they see our bees at the fair. We don't conflict with each other at all.

The President: If there are no objections we will pass the order and proceed to the election of officers for 1909.

Mr. Stone: I would like to ask these gentlemen what hour they have to go. I move we adjourn for the noon hour at half past eleven, and have our election before that hour.

The President: Mr. York, we will hear your paper now.

Preparing Honey for Safe Shipment.

An editorial in the November, 1908, American Bee Journal is devoted to answering the question as to how to prepare comb honey for shipment. It seems there are quite a good many bee-keepers who don't know just how to get their comb honey to the city markets without breaking down the combs. This is, indeed, a very important subject, and fortunately one in which I have had a rather large experience. Previous to five years ago I was an extensive dealer in honey in Chicago, and of course received and reshipped many consignments of comb honey, and never, so far as I can recollect, was there any loss whatever when the comb honey was properly packed for shipment, or packed according to the directions which I was always ready to furnish shippers.

The illustration herewith shows the correct method very clearly. A strong crate should be made to hold either six or eight cases of honey. There should be from four to six inches of straw, hay or excelsior put into the bottom of the crate on which to rest the cases. Such packing acts as a cushion so that the honey will not be broken out of the combs should the crate be put down rather suddenly.

While it may not be entirely necessary, I think it quite advisable to have

the crate large enough so that the packing material can be put at the outside of the cases as well as at the bottom.

A very important matter is that of handles to the crate. These are made by nailing on narrow boards at each side of the crate within three or four inches of its top, and extending out enough at each end so that they can be used as handles by two men to carry the crate of honey. These projecting handles also help to prevent the crate from being turned over endwise, as might be done by some careless or ignorant freight handlers. Of course, each crate, after the cases of honey have been put into it, will have

tination in perfect condition. It pays to pack comb honey properly, and not run any risk of having it broken in transit. It is a pity after having produced a nice crop of honey to have it destroyed on account of careless or inadequate preparation for shipment. Shipping-crates may add a little more to the expense, but when the net proceeds of the honey are counted it will be found that this extra investment has paid well. It is a great satisfaction to the shipper to feel that his comb honey will be delivered in good condition on account of the cases having been put into the right kind of crates, so that they can be safely moved by the freight-handlers.



SHIPPING CRATE FOR COMBHONEY.

narrow strips or boards nailed on top, so that no single case of honey can be taken out without first removing the top of the crate.

On the top should be put, either printed on cardboard or painted in large, black letters, these words:

COMB HONEY.

HANDLE WITH CARE.

I think the railroad companies require the glass sides of the cases to be turned toward the center of the crate so as not to be exposed.

I have invariably found that when comb honey is prepared for shipment as here directed it arrived at its des-

The question of preparing extracted honey for safe shipment is a very simple matter. It is usually run from the honey extractor in five-gallon tin cans or perhaps wooden kegs or barrels. My own preference has been for the five-gallon can, as there seems to be less danger of losing any honey by leakage. I have had rather unfortunate experience with honey in barrels, for, if they are not properly coopered, or not thoroughly dried when the honey is put into them, there is much danger of leakage, which is very hard to stop, once it is started. Of course, if honey is granulated the barrel is every whit as good as the cans; and for large lots of honey, of

course the barrels are easier to handle than the cans, as the former can be rolled, while the latter must be lifted or slid around.

The barrel as a package for extracted honey has been more generally used in the States of Wisconsin and New York. It seems that for a dry climate, such as Colorado, California and other Western States the can is the only safe receptacle for holding and shipping liquid extracted honey. Cans also have another advantage, that they can be piled up one above another after being boxed. It is a rather difficult matter to pile up barrels of honey.

Undoubtedly both the barrel and can will always have their advocates. It is a good deal in what one is accustomed to using, especially in the climates of Wisconsin and the Northern and Eastern States. However, I believe the tin can is more generally used today for extracted honey than ever before. If the honey-barrel appears in the market at all it usually has come from apiaries of those who began to put their honey in barrels when they first started to produce extracted honey many years ago. Practically all the newer extracted honey producers used cans at first and probably will continue to do so right along. Of course, occasionally one who has used barrels for a long time changes to cans, especially after a few large losses through leakage of the barrels through the hoops loosening or coming off entirely.

The school of experience in honey-shipping is very similar to that of many others, in that the tuition comes high. Unfortunately, however, the innocent are called upon to bear the loss, while those who are really the first cause of it do not suffer at all. By this I mean the purchaser of extracted honey in barrels has to stand the loss, not knowing until after he has paid for the honey that there was any danger of loss through leakage.

But, of course, the proper preparation of comb honey for shipment is the main thing to be considered. There is seldom very much risk in shipping extracted honey, no matter in what kind of receptacle, as often it is granulated before sending to the wholesale market, and thus there is no danger of loss whatever. It is very different with comb honey. The delicate combs are so easily broken, especially if shipped in cool weather. This is one reason

why comb honey should be sent to market before the temperature gets as low as the freezing point. In fairly warm weather the comb is rather tough, and seems to withstand considerable jolting; but in cold weather it doesn't take very much of a jar to cause the combs to break out of the sections. Unfortunately, also, a good many bee-keepers don't use bottom-starters in sections, so that the combs are not fastened on all four sides. Where the sections are plumb full of honey, and the comb well attached on all sides it would be almost impossible to break any of them out of the sections, no matter how much the honey was bumped around on its way to market.

Of course, where comb honey is shipped by the carload, and the cases are properly fastened in the car, the combs running parallel with the railroad track, it is very seldom that any of the combs are broken. In loading a car it is well to have straw or hay or excelsior at the ends of the car, so that the sudden stopping or starting will not cause breakage. It is not necessary to have any packing in the bottom of the car, but it would be well to lay down paper first so as to keep the honey cases clean. Paper or canvas should also be put over the tops of the cases after the car is loaded, so as to keep dust and soot from soiling the top row of cases. It pays to keep everything nice and clean in connection with comb honey. Appearance goes a long way in getting the right price for it. Do the best we may, still the cases are bound to show the effects of handling.

This paper is perhaps long enough, and if most of the important points have not been covered in it there are no doubt plenty of honey-producers and experts here who will add anything that I have omitted to mention.

George W. York.

Chicago, Ill., Nov. 10, 1908.

Dr. Miller: Mr. President, Mr. York is mistaken if he thinks I am going to make up a remark he forgot. You can have six or eight.

Mr. Holekamp: I would like to remark this, I would never advise a bee-keeper to put less than eight cases in a crate, rather more than less. A crate will be handled by pulling it, or two men getting hold of it. If there is less in a crate they will roll it like a

barrel and break the honey. I have seen this when I have bought honey, and I instructed the shippers to put more in, if they couldn't even it up, rather make a crate with ten than with six. If they put in less than six, if it was shipped by express, it came all broken and we have been getting hundreds of crates of honey.

Mr. Becker: I have bought three years' honey from W. J. Manly in Sandusky, Michigan, from five to eight hundred pounds at a time. He crates it for me and never have I had a crate come that leaked. There were from eight to twelve in a case of twenty sections, in a case that came a long ways, from Sandusky, Michigan, to Cincinnati, Ohio, from that to Decatur, from Decatur to Springfield and from Springfield to Pleasant Plains.

Mr. Holekamp: In small towns they unload honey probably with more care than in a large city. In a large city where these stations are the honey is thrown from the cars on to the platform under the sheds. They are handled as carefully as an agent will be where he often knows the parties who receive the honey. And shipping to a small place it is not as risky as shipping to a large city where the hands are less careful in unloading.

Dr. Miller: We have had much instruction and it is an exceedingly good paper. Just one point. I am a little unsettled as to what the paper advises when honey is packed in a car. One thing which you explain is how to place the shipping crate in the cars. The question as to having straw in the bottom of the car; I have never used straw and yet there is a question in my mind whether that isn't the best.

Suppose you can't pack as perfectly. You can't make as perfect a job of making a packing of straw as on the floor. If I could have it on the side of the car I know it may be good on the bottom, but if it is irregular the cases are more or less loose on the bottom and that is objectionable. Between my own experience and what is in the paper I am not sure just what is right.

Mr. Lee: Do you ship in carriers?

Dr. Miller: Without carriers.

Mr. York: My paper says not to put anything in the bottom of the car.

Dr. Miller: Didn't you advise straw on each end?

Mr. York: Yes, sir.

Dr. Miller: There is that objection, you can't make as square as a job. When I have loaded a load of honey it is butted up against the end and you can't move a case the least bit. Whether I could make as good a job with straw on the end is a question.

Mr. Holekamp: When I get honey the ends are filled and stamped in with straw; it must not be thrown in, but the honey must be tight in the car; that much straw must be put in.

Dr. Miller: Straw at the end or side?

Mr. Holekamp: The straw at the sides must be stamped down.

Dr. Miller: I have given that up. Instead of that, if there is a space, as there often will be, half the size of a case to fill up, instead of tramping straw I like a board setting vertically nailed on the floor so it can't budge, at the top nailed with a little board across it so it is straight and I haven't straw there, but there isn't anything can move. It is expected to be straight and isn't much jar sideways, but I want it so nothing will move. I think that is better than straw.

Mr. Lee: Does any of your honey break down in shipping?

Dr. Miller: I have had a little the other day. On a shipment made in a car probably five hundred miles the report came in it was in perfect shape.

Mr. Holekamp: The cars that came to me have to come over the Rocky Mountains, and that makes a difference.

Here reading was given by Mrs. Snyder.

Dr. Miller: I don't suppose there is a book more beautifully written than the book we have just heard read from. And if you take that book to learn something from you will be mistaken. And you bee-keepers that have been listening have listened to some printed facts.

Mr. Poindexter: I would like to object to that last part of that reading about bees having scouts sent out to seek a new home.

Mr. Moore: I was the one that spoke to Mrs. Snyder. It is a beautiful reading, but we must take it with a few grains of salt. It is something we should all read but we can't follow

the teachings; it is too much. It is in our business as in others, we need some poetry. There is nothing I would detest worse than a swarm coming out.

Mr. Stone: I make a motion that we proceed with the election.

Mrs. Snyder: He writes so many excellent books that are bound that he didn't put this as a test book.

Dr. Miller: He wants to fortify himself with facts. He had the queen go light on a place and the swarm find her. I have seen them light many and many a time.

The President: They will sometimes light on three or four places and then finally go to one place.

Dr. Miller: If you read the book you wouldn't know and I don't think I would when I read the book, know anything about bees.

Mr. Kildow: Do you say bees don't go to her, to the queen?

Dr. Miller: It is exceptional. The thing I object most strongly to in that book is the moral tone. It is so beautifully written you don't see the rottenness.

Mr. Bowen: The writer of that has caused a swarm of bees to swarm in the air too high. But it is a beautiful composition.

The President: How about the workers having all the royal jelly?

Dr. Miller: They have the same food for the first three days, then they are weaned and the worker is fed different from what the royal laval is.

Mrs. Snyder: I think it means that for generations and generations they have had to give up so much.

The President: We will proceed to the election of officers.

A Member: I second the motion.

The President: The Secretary will read the offices to be voted for.

The Secretary: For President first. The vote has to be by ballot.

Mr. Becker: Mr. President, it is generally a rule to fix the salary of the officers before election.

I move our Secretary be allowed seventy-five (\$75) dollars for this next year.

The President: Mr. Becker, our officers are not allowed any salaries.

Mr. Stone: That is out of the Legislature's fund.

Mr. York: I second Mr. Becker's motion.

The President: It has been moved and seconded that the Secretary be allowed seventy-five (75) dollars for next year.

Motion carried.

Mr. Stone: Mr. President, I want to say in regard to the Treasurer's salary of fifteen (15) dollars. There is very little work to do; it is really too much when you consider what the Secretary gets and what he has to do. But when you consider the responsibility of the Treasurer, he is getting less than he ought to have. He has to give a bond of two thousand (2,000) dollars and ought to have some compensation for it.

I move that it be continued at fifteen (15) dollars. I make a motion that the Treasurer get fifteen dollars again next year.

A Member: I second the motion.

The President: It has been regularly moved and seconded that the Treasurer be allowed a salary of fifteen (15) dollars.

Motion carried.

The President: Now we are ready for the election of officers.

Mr. Bowen: I understand the ballots are taken informally.

Mr. Stone: We vote by ballot, nomination or no nomination; that is according to our constitution.

Dr. Miller: I make a motion to facilitate matters to vote for President, Secretary and Treasurer at once, the first name being counted for the President, second Secretary, and the third for the Treasurer.

The President: All in favor of the motion say aye.

All in favor of it say no.

The ayes have it.

Mr. Stone: Mr. President, we are a little ahead of the hounds. We want to vote for six men; one for President and five for vice-presidents.

The President: We will do that later.

Ballots were passed around by the Secretary and the following were elected:

J. Q. Smith, President.

Jas. A. Stone, Secretary.

Chas. Becker, Treasurer.

Mr. Pyle: Mr. President, I believe you go a little too fast. This was an informal ballot, and then comes the formal ballot.

Mr. York: Mr. Chairman, all that is necessary now is to make this formal.

I move that the Secretary be instructed to cast the ballot for Mr. Smith as President, and Mr. Stone as Secretary, and Mr. Becker as Treasurer.

A Member: I make a motion to lay it on the table.

A Member: I second it.

Dr. Miller: Nobody considers it anything but an informal ballot.

Mr. York's motion was that it be made formal. I don't see anything wrong in making it a formal ballot now.

Mr. Kildow: The motion now is to lay Mr. York's motion on the table.

Dr. Miller: If this is to be laid upon the table it is the same as voting down Mr. York's motion.

Mr. Stone: Mr. President, if this motion to lay on the table prevails it will leave it as though we hadn't done anything.

Mr. York: I don't see the object of laying this on the table. Do you all want to write these names again? Because we get the same results. I am perfectly willing if you want to do that.

Mr. Bowen: The gentleman had the right to lay it on the table.

The President: All in favor of laying this on the table raise their hands.

Those in favor of the motion numbered five (5).

Those on the contrary raise their hands.

Those not in favor of the motion numbered eight (8).

The President: Motion carried. It is not tabled.

Mr. Becker: It seems to me strange that you call this an informal ballot, and the first should be for President, the second for Secretary, and the third for Treasurer. And the ballot is so declared, which I suppose is all there is to the election.

Mr. Stone: The motion was for an informal ballot.

Mr. York: My motion was that this informal ballot be made the formal

ballot, and that the Secretary be instructed to cast the ballot for Smith as President, Stone as Secretary, and Becker as Treasurer.

Mr. Stone: I see there is a move on foot to defeat this election, else a vote to table would not have been made, and every member has an equal right to vote as he may choose.

Dr. Miller: Mr. York's motion is before the house, that the informal ballot be made the formal ballot, and that the Secretary be instructed to cast the ballot.

Mr. York: I withdraw my motion.

The President: Let the convention vote for whom they want.

Mr. Bowen: Suppose you take another ballot and elect somebody else instead of the ones elected. The law says the officers shall be elected by majority vote. I make the point that the vote has already been taken and vote carried.

Mr. Stone: Since Mr. York has withdrawn his motion that the informal ballot be made the formal ballot, that settles the matter.

Mr. Bowen: I make a motion that the President, Secretary and Treasurer be declared elected.

Mr. Kildow: I understand it was an informal ballot.

The President: To satisfy everybody I would like you all to cast another ballot.

Mr. Becker: If the Association don't want me for Treasurer I don't want it.

I am like Brother Moore, the understanding was to me that the first one was for President, second for Secretary, and the third for Treasurer, and the constitution says so. If there is only one President, you can elect him by acclamation.

Mr. Kildow: But that was just an informal vote.

The President: The motion was made to vote on the officers again. I voted on a formal ballot and others on an informal ballot. I want them to vote again.

Mr. Stone: I renew the motion that the informal ballot be declared the formal ballot.

Mr. Moore: I second the motion.

The President: It is moved by the Secretary and seconded that the in-

formal ballot just cast be made formal. That the informal vote just cast be made the formal vote.

Mr. Stone: I call for a rising vote.

The President: Members in favor of that may stand.

Those in favor of the motion numbered nine.

Those opposed to the motion may rise.

Those opposed to the motion numbered seven.

Mr. Kildow: I don't think that is right.

Mr. Bowen: I want to say I voted for these men and they ought to be taken on a formal ballot.

The President: The Chair declares that the ballot is carried by a majority of two.

The President: The next is for five Vice-Presidents.

Mr. Becker: I move that the members that receive the most votes for Vice-Presidents be announced as the ones elected.

Motion carried.

The President: While the gentlemen are counting the ballots Mrs. Snyder will give a recitation.

Mr. Moore: I will say to the members here that I am the President of the Western Illinois Association of Bee-Keepers. We have no date set, but it will be advertised in the papers.

We make it a picnic affair, and take our families and baskets and have a good time. I invite you all.

The President: I will say I have been over there and they have very nice times.

The following were elected for the five Vice-Presidents:

First Vice-President, Mr. A. L. Kildow.

Second Vice-President, Mr. J. H. Moore.

Third Vice-President, Dr. C. C. Miller.

Fourth Vice-President, Mr. W. W. Hyde.

Fifth Vice-President, Mr. Louis Werner.

Mr. Kildow: I make a motion to adjourn till 1 o'clock.

At the close of the election the meeting adjourned to meet again at 1 p. m.

Afternoon Session, Nov. 20.

The President: Gentlemen, we will come to order for a brief session.

Mr. Stone: What will we do about badges next year?

The President: These badges will do.

Mr. Stone: Mr. President, I will have to be absent to attend an insurance meeting. I don't know how long. If there is a quorum there I will be right back, but if they haven't I will have to stay. I have to go to the insurance meeting.

Mr. Becker: We will have to have the election for Foul Brood Inspector, and I make a motion to elect our President, J. Q. Smith.

Mr. Moore: If there is no further nomination for Foul Brood Inspector I move to vote by acclamation.

Mr. Stone: I second it.

Motion carried.

Mr. Stone: I nominate our present occupant, Mr. J. Q. Smith.

Mr. Pyle: I second his nomination.

Mr. Moore: All in favor of Mr. Smith acting as Foul Brood Inspector say aye.

Mr. Kildow: All in favor of J. Q. Smith being our Inspector for the ensuing year may rise.

Motion carried.

Mr. President: I am desirous, as is also Mr. Holekamp, that we have a discussion on his paper. And I think it is important that we should draw out all we can.

Mr. Holekamp: What I would like to know is if other people have experienced the same diseases that we have experienced on my side of the river.

Mr. Kildow: Wouldn't it be better to appoint our Legislative Committee, and then discuss this?

The President: We passed a law before that the Executive Committee be the Legislative Committee.

Mr. Kildow: Do they understand that they are to see that we get our law through?

Mr. Pyle: You know that under any corporation of this kind, unless it is specified in the constitution, any motion made last year is only good for that year. I make a motion that the Executive Committee be the Legislative Committee.

A Member: I second the motion.

The President: It is moved and seconded that the Executive Committee be the Legislative Committee.

Motion carried.

Mr. Becker: We talked a little on this Legislative Committee yesterday afternoon. Is this now appointed? Those that have belonged to the committee know how much we have had to contend with, and as I stated last evening, the way the bill was drafted before, in drawing the bill the Governor had the appointing of the Inspector.

There was a great deal of dissatisfaction in the Legislature in that. Some claimed the Governor had too much power politically now, and that would put another appointee under his jurisdiction. They were opposed to it. And some others contended the Governor would have to have the power under that bill. When the committee meets later on we can decide by asking some of the legislators, and, by the way, by that time the question will be settled who will control the Legislature. If the friends of the Governor will control or his enemies.

The bee-keepers, we have now made efforts for the last three times to have it passed. I think we will get it, providing each bee-keeper will go to his Representative and explain to him that this disease is so destructive as it is to the human family, and they have laws against small pox and other diseases, and this disease spreads as much and affects as much as small pox among the human family.

The Representative from Edwardsville, he only had a few bees, but he saw the effect of the disease. He told me in the presence of Mr. Werner that we could count on him, and he wanted our assistance to get it before the committee and through the committee, because he knew what effect the disease had upon the bees.

I think if the bee-keepers will work we can get that bill through this winter.

The President: Let us take up that discussion on Mr. Holekamp's essay.

He wants to know if there are any members present finding dead brood which is not foul brood, and find more than usual, the disease which we have found in Missouri, have you found it in Illinois?

Mr. Gray: I have had some ex-

perience this year, only my bees don't get over it.

I have had it for three years. It is not foul brood nor black brood. It holds right on. It is still there. It will get it from feeding back honey. And they die in all stages, from two or three days old till they just come out of the hive. I have had it for three years right along.

The President: Are your bees in one apiary?

Mr. Gray: Yes, sir. But a man up town had it all through his apiary.

The President: Have your bees access to any canning plant?

Mr. Gray: No, sir. They work on the river. In the fall we have sweet clover every year.

Mr. Holekamp: Did you find small bees, usually small bees coming from the cells which looked weak?

Mr. Gray: I can't say that I did.

Mr. Holekamp: That is starve brood, Mr. McEvoy says.

Mr. Gray: They had it when they had plenty. I don't see how that is starve brood.

I sent a specimen to Washington. He said the brood was raised in a hive that had no sealed store. I fell off consequently this spring. It was worse than ever.

This spring I changed everything in the yard. Most of them when strong enough to can build up, but there were a few didn't.

Mr. Bowen: Do you ever change your queen?

Mr. Gray: Yes, sir. I change them often. I just started over a year ago. It didn't seem to make any difference. It kept on just the same. I don't think it could be starve brood. The bees would clean out the comb perfectly clean.

Mr. Pyle: Didn't I understand you to say, first it came only in a few combs and then more and finally over the whole frame?

Mr. Gray: Yes, sir. But just a few cells at first. The next crop there would be more, and the next crop there would be probably three or four of them dead.

A Member: I have had quite a good deal of experience with it, whatever it is, foul brood or whatever it may be.

A year ago this last summer I sent a sample to Mr. Miller. He didn't

know what it was. And this summer I sent some to Mr. France and he didn't know what it was. Whether it was American foul brood or what. He suggested changing queens.

I had it a number of years but didn't notice it till last year; they would dwindle down, but this season it was bad.

I had quite a good many hives setting and after each swarm there was a hive died out.

Two or three years ago, when I found them, I cleaned the hive out and gave them a comb of honey and a hive, and put in some comb-foundation, filled frames about half full. They went to work and built up strong. After they began to breed I noticed this hive was worse affected than any. Toward the last of the season they built up and grew strong. During the later part of the season they diminished. About the first or second week in September I sent to Mr. York for some Italian bees, and for a few days they seemed all right and seemed to do very well. What it is I don't know. I know it is very destructive. I know it has been in my apiary for a number of years.

The President: Any further discussion on this?

A Member: Was your brood with black heads?

A Member: Black head sometimes, and part of the bees black.

A Member: Were they watery?

A Member: No, sir. I don't know. I cut down part of the frame and comb and boxed it and sent it away.

A Member: Weren't they shy of pollen?

A Member: I don't know.

A Member: It is nothing but starve brood. All bees in that stage get watery and the heads turn black.

If you will change queens and feed powder sugar, by that treatment you can clear them of it. If it doesn't appear next spring it is a total cure.

In some places I find two or three colonies. I double them up till they are strong, then I recall the queen and that colony is as strong as any colony. And a good deal of the cause is where there is no pollen.

Mr. Kildow: I think it is impossible for bees along a river to be without pollen.

A Member: Every now and then

you could see one come home with a little pollen, and once in a while with a little smart-weed pollen on it, but a good many wouldn't have any pollen at all.

Mr. Kildow: My idea was we have more than we need. That is an exception then.

A Member: Yes, sir; that is an exception.

Mr. Ernest: I had the same kind of a case. That is what I did. The queens would lay and instead of gaining they would lose. There would be three dead and five alive, and then another week there would be seven dead and five alive, and then twelve dead and five alive.

Destroy those queens after they have worked out the foundation. One queen will do.

I introduced a queen to a good nucleus, then I put another good healthy queen from a good colony and put it in a foul brood colony and now it is cleaned out.

This was all done this year, I had forty colonies different ways. I had foul brood in the first, second and third stages. And this year we had some foul brood too.

If it reappears next spring, but we can't tell, we live near a timber, we can only check the thing.

Mr. Holekamp: What I have reference to is not foul brood.

Mr. Moore: Anything in the nature of starve brood is easy to combat with. Bees often will not uncap enough honey to feed the brood. But if we look after the bees in the spring of the year and they uncap, and there is not enough pollen, put out something in the place of the pollen and they will feed themselves.

The queen has nothing to do with it, only to extent that some other queens will breed bees that are a little better in uncapping honey.

It cannot be from his description anything but starve brood. But Mr. Holekamp's, from his description, is foul brood.

In the fall and summer we find a good deal of dead brood, and if there are no indications of foul brood it disappears in a very short time.

Mr. Holekamp: In parts of the county, not by me, but in other parts of the county, it is very destructive.

The President: Probably in another year we will know more about it.

Mr. Holekamp: I had plenty of pollen and honey left after the bees had forsaken the hive.

The President: I think it will be well for us to watch it next summer and pass this.

Mr. Ernest: Last fall was the first I saw of it. We examined it and found what it was. It was foul brood. The brood was dried up. We took a stick and pushed in and found they were rotten. I tried to save them but I couldn't.

I found eleven stands. Well, about eight out of the eleven I saved. They looked like they would wither up. Soon after they would cap they would dwindle with a hole right in the head.

I went to work and put three small pieces on the frames. I left them four days. Well, then I changed them out again and they did well enough. One of them I happened to neglect and it appeared to get along, got along the best of any of them. They made over thirty (30) pounds of honey, and there were two others that made twenty-four (24) pounds. But they appear to be getting along very well now. But I shall be looking a little closer after this.

Mr. Pyle: I would like a little discussion on the merits of the Baldrige system. Perhaps everybody understands it and perhaps everybody doesn't.

I think for a man that is a bee-keeper there isn't anything as helpful as the Baldrige plan of treating foul brood. More for a beginner. But also for a man that takes bees and can make a success of it. But I think the Baldrige plan is the best.

A Member: The Baldrige plan is all right but it is slow. I made a double escape and of course it will take twenty-one to twenty-five days for the bees to hatch out. Then you empty them and you can make wax. But if you have to make two or three trips you wouldn't be paid for your labor. It is a good plan but you need extra escape for it. If you have but one escape fastened to the entrance, make another. After a few days you can clean it out.

I have only got a few colonies but I have so many that I make as many as I need. Make a hook and frame, when the bees are done I make the wax and they will go for the next ones.

Mr. Pyle: Two weeks time is enough.

The President: Anybody else got any further discussion on this?

Next on the program is W. W. Lee, Pontiac, Ill. We can pass that unless he has left his paper.

Mr. Stone: Mr. President, I don't think we want any more question box now.

Hasn't anything been done, and if nothing is done in regard to this foul brood law, the committee will go ahead and do as they please. Nobody has been instructed to ask for that yet.

The President: It seems like this committee has different ideas. One says the Governor has to appoint, others say he doesn't. You say they won't allow the Governor any more power, and the other says they would allow the Governor to appoint.

Mr. Stone: We had the bills drawn up for this Association to appoint on the approval of the Governor the foul brood inspector, but when we went there they forced us to change it. It was Heintz, of Jacksonville, who told me.

When it was before the appropriation committee they kicked. Heintz came to us, to Mr. Becker, Mr. Smith and me, your bill, Mr. Heintz said, they won't allow because they won't allow any appointment of any new officer but by the Governor. He said you go to the Governor, and he instructed us to go to the Attorney General.

We went and he wasn't in. The other members of the committee appointed me to go and have the bill drawn up. And it was drawn up that way. If the Legislature is willing I will be the first fellow to put it back where it was.

The President: Seems like there were two different opinions.

We, as a society, don't care which appoints him just so we get it.

Mr. Moore: This State Foul Brood Inspector must have the same power as a sheriff. And, therefore, must be appointed by the Governor. And he must have the authority from the Governor, if he finds diseased bees and apiaries, to burn them.

This committee will have to find out when this thing comes up. No use working for a foul brood bill unless we can get something that is compulsory.

We want the appropriation, but we can get that. We want a compulsory

foul brood law through, too, and we do want it. That can be done largely by a personal talk to our Representatives.

Mr. Stone: Now it is all right looking at it that way, but if we get a law giving this Association the power to appoint the Foul Brood Inspector, the Legislature passes the bill and the Governor signs it, whether he names the Inspector or not he stands for it just as though he made the appointment.

Mr. Moore: This appointment will have to be made by the Governor. You want it that he is appointed on recommendation of this Association.

Mr. Stone: The Attorney General said for us to recommend—meant same as our appointing—and there was no way other than the appointing by the Governor.

Mr. Becker: I think Mr. Moore is correct. All police officers, constables, and all those that receive their authority from the Governor, under the Governor's seal, must be appointed by him.

Mr. Holekamp: Unless the constitution of Illinois is different from Missouri Mr. Becker's statement does not hold good.

We elected our Governor with the understanding that our police officers appointed by the Governor are not to be appointed by him.

In the future our Foul Brood Inspector and veterinary surgeon is appointed by the Board of Agriculture. But I don't know how it is here.

Mr. Pyle: This Foul Brood Inspector won't be a police officer, he won't have to arrest a man. That is the kind of an officer that is bound to be appointed by the Governor.

We just need the authority to go on and inspect and destroy the property. For instance, the Board of Health, wherever they get their election from, they don't have to arrest a man.

Suppose a Board of Health in a community quarantines a man and he breaks that, a police officer would have to arrest him. They just want to have the authority to go ahead and do this; if a man objects then he can take the civil law into his hands.

Mr. Moore: The Mayor appoints the Board of Health. They are appointed by the highest authority in these cities. They are under the highest au-

thority, and I think it will be the same in the State authority.

Mr. Bowen: It seems to me that a law that prohibits a nuisance, this law would be under that.

Any man that keeps bees with diseases and he does not destroy them, if the Inspector doesn't know it, it is all right, but if he is told he must take some steps to destroy them and if he does not you can go ahead as with a nuisance, you can tell an officer of the law and he will see that the law is enforced.

If knowingly keeping foul brood, which is not only a detriment to themselves but to his neighbors also, is not a nuisance, what is it? Foul brood is known, by most men, to be a nuisance.

Mr. Smith: There are different ways of getting at this. You can file a complaint before a justice of the peace and have a warrant issued, or you can put that authority in the Inspector.

I had an interview with the Governor. He said if the law went through after we had it he would appoint no one unless it be through the recommendation of the Bee-Keepers' Association. He said, "I know nothing about bees, I would want somebody known to be competent. I wouldn't appoint him without the recommendation of the Bee-Keepers."

Mr. Stone: Was that resolved when it was voted on? Was it resolved to have that bill passed so we can appoint?

Mr. Pyle: It is always a good idea when you have a committee; they want to know more than me, way up at Putnam.

I would like to get a compulsory law that is good and binding. That would suit me, and I suppose the others want the same.

Mr. Bowen: If we haven't confidence enough in the committee, better appoint another committee. It is well enough for the committee to have instructions, but as to dictating, we ought not to do that.

Mr. Pyle: Wouldn't it be good to have a vote so it will be absolutely compulsory?

Mr. Kildow: It won't be any law to us unless it is compulsory.

Unless we get a foul brood law en-

acted with a compulsory clause it is no good. We must have that.

A Member: I move it be the consent of this convention that our Committee on Legislation be instructed to have a law passed so it will be compulsory on people that have foul brood and know it, and compel them to have it remedied.

Mr. Kildow: Why not have this committee go on and push it till we get this law we want, that they turned down?

Here the law was read.

Mr. Bowen: The last part isn't worded right and it will never go through that way.

Mr. Moore: This bill provides for the appointment of the Inspector by the Governor.

Is there any second to that other motion? If there is not I will make a motion that our Executive Committee be instructed to secure the passage of this bill as it stands or make the changes they deem necessary.

Mr. Kildow: I second it.

Motion carried.

Mr. Holekamp: There might be some change, might have to make some additions. The old law might have to have something added to it. You might want to change it a little. And you might have to change it a little.

The motion was put and prevailed.

A Member: About what per cent of colonies over the State have this foul brood? Is it a small or large per cent?

Mr. Smith: Per cent isn't nearly as large as three years ago.

A Member: Find it mostly among bee-keepers or farmers.

The President: Bee-keepers keep it down but farmers don't.

A Member: They might have to have ten inspectors and destroy thousands and thousands of colonies of bees.

Mr. Holekamp: No! No! Our Inspector inspected ten thousand colonies of bees and never destroyed one.

It must be necessary that the Inspector has the right to destroy them if the party is unwilling to assist in this kind of work.

If he hasn't that authority the people will just laugh at him.

Mr. Gray: That is for foul brood.

That provides for only foul brood; it ought to include other diseases.

Mr. Stone: Mr. President, our new brother here, just for his information and others in the same line, we will tell just what we told before the appropriation committee in the House.

For those men who have two or three colonies of bees and foul brood kills them off, and they let the hives stand there, full of the disease, while the large holders or big bee-men exterminate them every year.

What we want is the authority to go and clean these hives up. If they don't feel disposed to take any action the Inspector ought to have the right to defend the other parties from the contagion of these worthless, empty hives, whether foul brood or other contagion.

We want to work as members among our own men and have them come there informed.

We want the power to go and clean up these two or three colonies where the people won't clean them up themselves.

The President: I think that this committee is fully competent to know what the bee-keepers of this state want. They have been instructed year after year, and have been before the Legislature for four different sessions. We would not like to have our hands tied. We don't know in what position we have to present this. We may have to make some amendments.

We are anxious to get this bill through the best way we can. And I think if it is left to the committee they will do better than if their hands are tied.

Mr. Kildow: The supposition is to get a law as nearly that as we can.

Mr. Moore: I think this committee has the sentiment of this session. It is hard to make a motion to govern the ground. It may be that they will have to change it. It is better to leave it go in that way.

Mr. Becker: Once in a while you will find a party where you are out inspecting bees, and you report the disease of the bees, they will not let you inspect their bees.

I struck a man like that in Edwardsville. He said: "I'd clean my foul brood up, but my neighbor four or five blocks away has it, and there are four or five hives in the grass."

I asked him in a gentlemanly way if we could look at his bees. He said: "No, sir." I said: "You have no objections for us to walk around?" He said: "No; but don't disturb them." And I just got my nose to one hive, and I could smell the disease, but he wouldn't let me examine them.

Another man in East St. Louis had five or six the fall before, and had been cleaning up, and was pretty well rid of it, only in a few cases. One case, especially, had a number of cases in the colonies, and he finally cleaned them up and moved them in the country to get rid of them.

I saw our man there and we went to the cemetery and he sold some to Mr. Holekamp; he examined them to be sure.

There was one colony the old man had that was pretty near dead. He said: "I don't want you to bother them; they are nearly dead." I said: "Can I look in the colony?" He said: "I don't know." It looked like a hog or a pig pen. I had to pry to get it open. I told the man with me: "This won't bother you very long. They will be gone in a few weeks." Everything in the colony was rotten. I asked him to destroy them. He said: "They will go like the rest."

The disease was there, and if some other bees come and rob them, you can't get rid of the disease. If they don't want to destroy them, they don't have to.

Mr. Stone: I don't want to assume anything, but, being here on the grounds, if I was put in as chairman of this committee, I could often do things without calling the other two, when, if I am not the chairman, I couldn't do anything.

The President: You have as much authority as I. We can settle that among ourselves.

Mr. Bowen: If the chair is now at leisure, I would like to ask the question that some of you people of experience can answer:

How is the best and easiest way to unite weak colonies with strong colonies, or strong colonies with weak colonies?

Mr. Holekamp: That depends on the season of the year, and whether the bees are gathering honey or not.

Mr. Bowen: Take this season of the year.

Mr. Holekamp: You cannot unite.

A Member: I got three swarms out of the timber and I united them. I don't know how to do it, but I did it right away.

Mr. Kildow: I move that we adjourn.

Mr. Pyle: I second the motion.

Mr. Stone: Mr. President, we want to get out our letter-heads pretty soon. Shall we have it Thursday and Friday next year?

The President: No, sir; Wednesday and Thursday.

Mr. Kildow: Why couldn't we get it some other time, so we won't be crowded for hotel room? Can't we have it a week before or a week after?

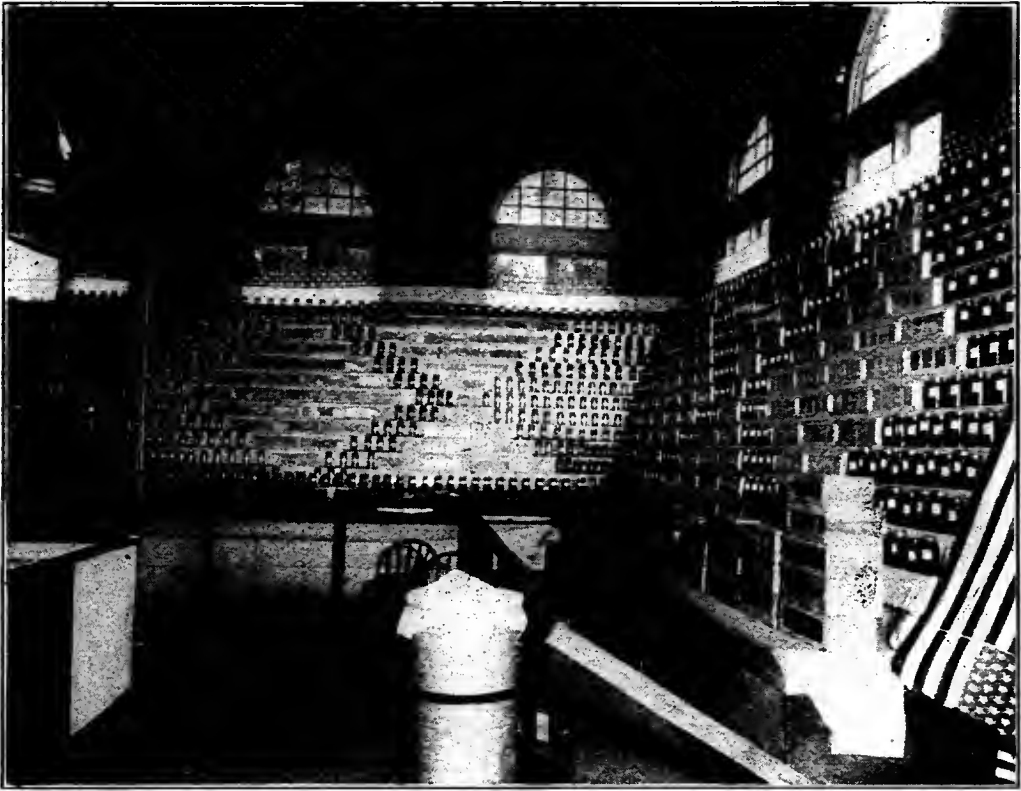
A Member: My wife comes to the Rebekahs' convention when the Odd Fellows meet, and I come to the Bee-Keepers' convention. If you change the dates I can't come because she won't come without me.

I move we have it the same dates again next year.

It was so decided.

Mr. Stone: I will have it placed for the 20th and 21st of November next year again.

Adjourned sine die.



Beeswax, Comb, and Extracted Honey.
Exhibit of Aaron Coppin, at Illinois State Fair.

Honey and Beeswax Exhibits at the Last State Fair.

Mr. Geo. W. York, of the "American Bee Journal," who was judge of the apiarian exhibits, says of them as follows:

From the American Bee Journal.

Illinois State Fair, Apiarian Exhibit.

It was our privilege as well as honor to be selected again as judge of the bee and honey exhibits at the Illinois State Fair, held at Springfield, Sept. 25 to Oct. 2, 1908. We have seen a number of apiarian exhibits at various fairs, but with the exception of those at the World's Columbian Exposition here in 1893, we believe the exhibits in the department of "Bee and Honey" at the Illinois State Fair this year were the best we ever saw.

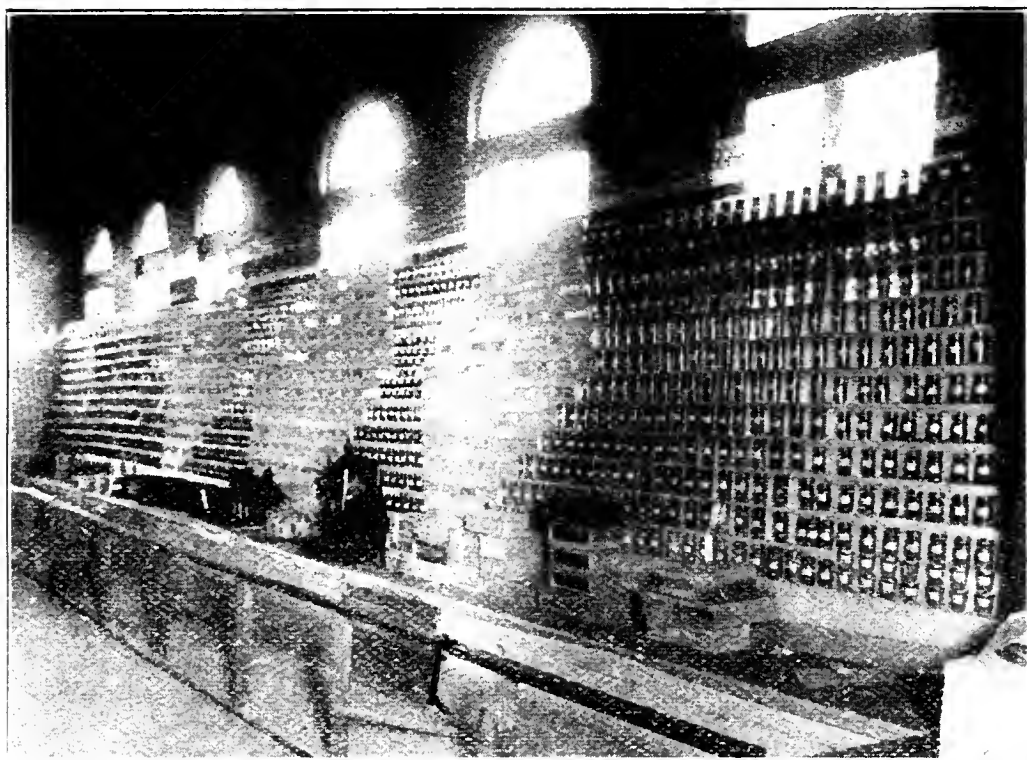
There were only 6 exhibitors in all, and only 4 really competed in everything in the apiarian line. They were Aaron Coppin, of Wenona; Chas. Becker, of Pleasant Plains; Jas. A. Stone & Son, R. R. 4, Springfield; Geo. Rumlér, of Indiana; Louis Werner, of Edwardsville; and the sixth person, who had only one exhibit, and that was a display of designs in beeswax. The

first 4 mentioned were very fine indeed.

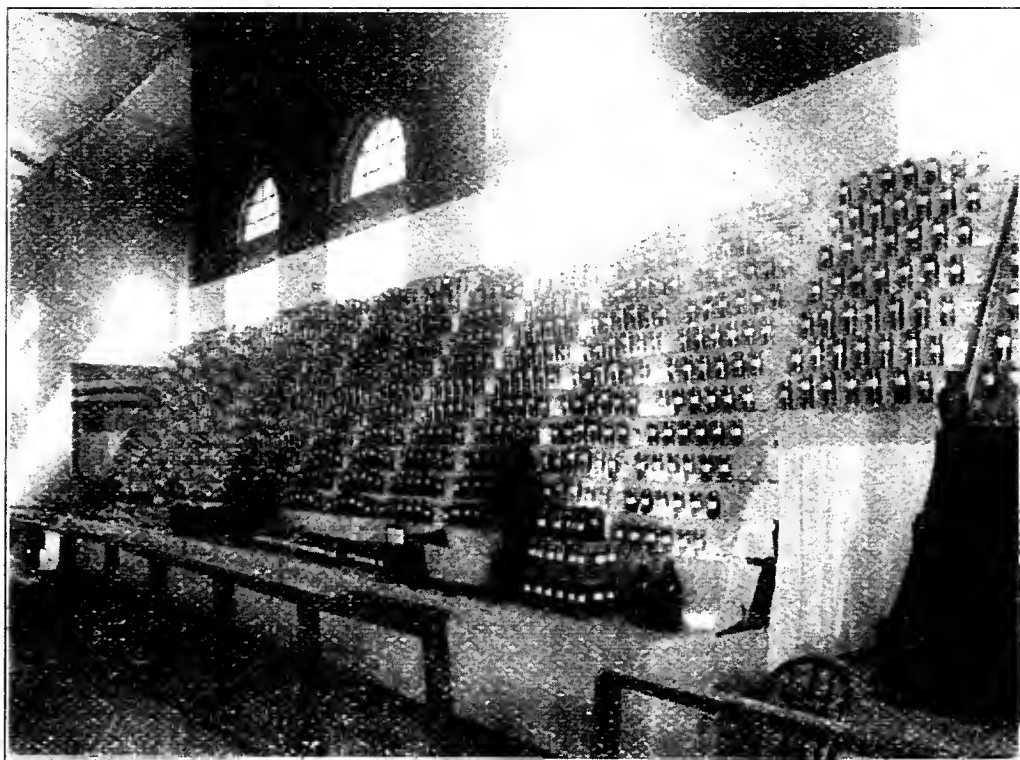
One of the beeswax designs that attracted the attention of visitors was that exhibited by Jas. A. Stone & Son. It represented Uncle Sam chained to the saloon, the whole thing—saloon building, chain links and Uncle Sam—being made of beeswax. It certainly was an impressive temperance lesson. But some of these good days Uncle Sam will be freed from his cursed connection with the whole infernal liquor business. And bee-keepers will help break the chain that binds them together. May the coming of the glad day be hastened!

We were indeed proud of the exhibits made by bee-keepers at the Illinois State Fair. Mr. H. J. Cater, the genial and very capable superintendent of that particular department of the Fair, feels greatly encouraged. He also has charge of the culinary department, and is making a success of his work in the interest of bee-keeping and the kitchen.

We are glad to be able to accompany this report with some pictures of the apiarian exhibits which were so difficult to judge, on account of their general superior excellence.



Beeswax, Comb, and Extracted Honey.
Exhibit of Charles Becker, at Illinois State Fair.



Beeswax and Extracted Honey.
Exhibit of Jas. A. Stone & Son, at Illinois State Fair.

Chicago-Northwestern Bee-Keepers' Association

PROCEEDINGS

OF THE

Annual Convention Held December 2 and 3, 1908,

AT

CHICAGO, ILLINOIS.

The 18th annual convention of the Chicago-Northwestern Bee-Keepers' Association was held at the Briggs House, Chicago, December 2d and 3d, 1908. It was called to order at 10:30 a. m., December 2d, with the President, Mr. George W. York, in the chair.

President York: The convention will be opened with prayer by the pastor of the Ravenswood (Chicago) Methodist Church, Rev. Dr. R. J. Wyckoff.

Dr. Wyckoff then offered the following prayer: "Our Heavenly Father, we rejoice that we have another privilege of coming together to consult about our mutual interests; and as we come from far and near to gather in this place, we pray that Thou wouldst be with us and be in our counsels, for somehow or other we believe the more we know about God, the more we know about the creatures he has made. Help us, we pray Thee, to get in such sympathetic relation with all the affairs of our calling that where we cannot understand we shall have a strange intuition to help us solve our perplexing problems. We beg to thank Thee for the great interest thou hast put in Nature. We come to rejoice that when our hearts are right, when they are in tune with the great manifold workings of God and Nature, we can see His footsteps, we can trace His own Divine intellect even in the intellect of a bee. Do Thou bless us together today; bless the chairman; bless all the reports

that shall be made; bless, we pray, all of us as we bring our problems together to talk about the difficulties of our high calling; and so may we go back to our homes feeling that our visit to this great city has been one of great profit. And bless us in all that we try to do, and ultimately bring us to that place at last where we shall know all truth, where all problems shall see their final solution in the light of another world, through Jesus Christ our Lord. Amen."

President York: We have come to another session of the Chicago-Northwestern Bee-Keepers' Association, and I think, judging from the number that are here, we have the largest attendance of any opening session we have ever had. I should not be surprised if we would have this room crowded before the closing session tomorrow afternoon. I think perhaps most of you understand that we do not have a set program in these conventions. We let the bee-keepers make the program by asking questions. I will appoint Mr. Arnd to pass the slips for questions, and to usher and wait on the people.

While we are doing that, it would be nice if we could know who is here, and I am sure you will be glad at the outset to "know who is who." We have bee-keepers here from Kansas, from various parts of this State, from Wisconsin, and one from Victoria, British Columbia.

President York: The Secretary will

read the report of the minutes of the last meeting.

The Secretary, Mr. Moore, then read the minutes of the last meeting, and also the Treasurer's report, both of which was moved and seconded that the minutes stand approved.

President York: I will appoint as Auditing Committee Messrs. Dadant, Wilcox and Smith; and as a Committee on Resolutions, Dr. Miller and Messrs. Kimmey and Kluck.

President York: The Secretary has a few letters which he will now read.

Mr. Moore then read letters of regret from Mr. E. D. Townsend, Mr. France, Mr. J. A. Stone and Mr. George E. Hilton.

(Recess.)

Breeding Different Races of Queens In Same Yard.

"Is it honorable and good business policy for a queen breeder to breed two or more races of queen bees for sale in the same yard, or in yards so near together that there is danger of the races mixing?"

Dr. Miller: I don't think that is a thing for a queen breeder to answer. If I were buying, I should want to know that those conditions existed, and I would want to know in some way how I could be assured that they did exist. From the standpoint of a queen breeder, I should say it was very poor policy, because he could not be certain of anything.

Mr. Kluck: I would simply say that if I knew of a queen breeder that would have two or three races of bees in the same apiary, I would not buy any bees of that man. I should not want them at any price.

Mr. Wilcox: If he advertised that he would furnish all kinds and gave his prices, would you not suppose he was producing them in the same apiary?

Mr. Kluck: No, I would not know. He might have them five or six miles apart.

Mr. Wilcox: This question suggests to my mind a question I have been thinking of a good many years. In buying queens, whether it is good policy for a man to sell us queens of so many kinds, select tested, tested, warranted, and not tested. I have made it a rule to buy from a man who selects all of his kinds and at one and

the same price, if I buy untested queens. If a man is buying tested queens he will get good ones anyway, or ought to.

Dr. Bohrer: I would not like to say that it was strictly dishonorable, because a man might send out mongrel stock and not be aware of it. Some breeders think they can rear a lot of drones in an apiary of one kind and give them their liberty, and have everything else in the same yard confined, and if they watch and have a lot of queens of the same strain fertilized they would hunt up the other drones and not let them loose, except the desired ones to have queens fertilized by. But to my mind no man would be so systematic and enforce this rule so carefully and constantly as to do anything of that kind. I have even gone so far as to write to men who breed queens of different kinds and ask them how far apart their apiaries are, and unless they are from six to eight miles apart I will not buy of them, as you cannot tell how far a queen will go from the hive. I have timed them by my watch and found them to be away three-quarters of an hour, and there is no telling how far they have been from the hive, and no telling how far the drones will go; and I would advise men, and I think the different States ought to enact a law requiring men who breed queens or stock of any kind to arrange matters so that amalgamation will be utterly impossible. If you have different queen-breeding apiaries ten miles apart I think there would be no danger, yet I am not sure of it. Bees have been known to go five miles from their hive in search of food, and how far a queen will go from her hive I don't know, and no one knows how far a drone will go from a hive. One man informed me that he knew of a man who was breeding queens and would rear two kinds of queens in one hive and four kinds in one apiary. You will be sure to get a mongrel stock if you patronize a farmer like that—absolutely certain not to be a pure queen.

Mr. Dadant: I used to rear queens for sale, but have not for years. I would like to say something for the queen-breeder who rears queens of different races in the same apiary. When we began to import Italian queens forty years ago and rear Italian bees we had nothing but black bees.

Would you have us kill all our black bees? We had to rear queens in the same apiaries having different races of bees, and there were as good queens reared as there are today. It is a bad policy, when you can breed them apart, to breed them in the same apiary, yet it can be done. I think it is a mistake to put more than two races in one apiary. It is better with one race. The man who succeeds will succeed better with one race than with more than one, but it is difficult to rear queens from one race alone and be sure there is no other race. If we put our apiaries six, eight or ten miles apart, there are probably bees belonging to other people within a shorter distance. We cannot be sure of that. Are we to abstain from rearing bees if there are others near? We can breed from the best and eliminate other races. I believe in trying new races, and not in the same apiary, but I don't believe in condemning a man because he does it, because he cannot usually help it.

Mr. Wilcox: There is one point introduced here that needs modifying a little. I don't want it on record that there is danger of amalgamation from eight to ten miles apart, as suggested by Dr. Bohrer.

Dr. Bohrer: I don't think that there is at ten.

Mr. Wilcox: At five, even. I think there is practically no danger at a distance of three miles. I know bees have mated three miles apart—where Italians and black bees are located three miles apart; but I have never known of any serious mixing at a greater distance than that.

Dr. Miller: It is a very easy matter to stand off and throw stones, and we who are not professional queen-breeders are very likely to get into that list. Now, as I sat here thinking the matter over, it looked to me an exceedingly difficult thing for any man to rear queens and guarantee that they should be pure, of any one kind. The fact is, I don't know of any kind of queens that I would guarantee as pure unless I should guarantee that they were pure hybrids, and I am sure that the queen-breeders who are trying their best to get stock pure have done a whole lot of good, and we ought not to be too strict in our requirements of them. At the same time, if they are honest, I am sure they ought to try to give us what they represent they are giving us; and when you get

right down to the bottom the thing we mostly want is honest men to deal with, whether they are queen-breeders or something else.

Mr. Baxter: That is my question, and I introduced it because I have been very much provoked on this score. I am not a queen-breeder, but I am a producer of honey, and my aim is to get the very best race of bees that I can get for the work. That race is the Italian; and when I send to a queen-breeder and want an Italian bee I don't want him to send me something else. I got some importations about twenty-five or thirty years ago, and I am still breeding queens from those importations, and I have sent and got others to vary my stock and possibly improve it, as I thought mine would degenerate, and I think I have got Cyprians for Italians. I know I have some from an importation of thirty years ago that have the characteristics of the pure Italian more definitely than those I have been getting, and I know that some of our reputable queen-breeders are breeding two different races in the same yard and in an adjacent yard. Some of the queens I have got recently I would rather have paid \$5.00 to get them out of my yard than to have them in my yard. I can breed better bees of my own stock.

Dr. Bohrer: I would ask if any one ever bred Italian queens from any one queen that would duplicate herself invariably and not show almost positive evidences of foreign blood? I have never had one, and I purchased a queen some forty years ago, paid Mr. Langstroth \$20.00 for the queen, and after rearing twenty queens, the blackest insect I ever saw hatched out from her brood, showing there was foreign blood. There is no way of knowing that the Italians are in the highest grade of purity, and you cannot get them in any distinct race. Mr. Langstroth said they were not, and I said I doubted it; I know they are a distinct race. What is a distinct race? Where do the Goldenes come from? Are they not our best grade of Italians bred up?

Mr. Wheeler: I was wondering if these men did not have the good of the bee-keepers at heart more than we give them credit for. If a man would send me a queen bee that produced a touch of hybrid stock I would

consider it an advantage. I believe that the hybrids are better than the pure blood. Is it possible that these men think that it is a good thing for the bee-keeper to have foreign blood in the stock?

Mr. Baxter: The characteristics of the Italian bee are prolificness, docility, activity and capability of carrying honey if there is anything within a radius of five miles. That has been my experience of the last thirty years. As soon as I open a hive and see the bees I can tell pretty near, in a very poor season, in the fall, say the first of September, whether that hive has enough stores or not, by the docility of the bee, their quietness and their color. Now, hybrids, as a rule, the nearer they approach the less they will have and the more scattered it will be. With the Italians, the more they will have and the more compact it will be. I have had enough experience with the blacks, the Italians and the Cyprians to know pretty well. I have raised honey by twenty or thirty thousand pounds a year many years, and I think I can speak from experience, and I think there is no race of bees on the earth that will come near to the Italian for producing a good crop year after year. I know that for a positive fact.

Mr. Wheeler: I keep pretty near as many bees as Mr. Baxter, and I would say that I am positively certain that the hybrid will produce just as much honey as the pure Italian.

Mr. Baxter: I started an apiary five miles from my place in 1888, and I now have a certain stand where I put a certain stand of pure Italians, and you will go there today and find that colony in the same condition. It has never been Italianized, and I have never requeened it. There is a queen that has reduplicated herself. She is an Italian queen today, only home-bred. She was an Italian queen when I put her there in 1888—twenty-one years ago—and I have got the proof of that; people who have been working for me who will verify my statement.

Dr. Bohrer: That is a valuable queen, and you ought to continue her progeny.

Bee-Keepers Non-Smokers.

"Why is the average bee-keeper a non-smoker?"

Dr. Miller: Because in a time that has gone by A. I. Root sent out smokers to some of them and stocked them, and they never got started since.

Mr. Kimmey: For the reason that a fish out of water weighs more than it does in—which isn't true!

Dr. Miller: Do you mean to say that it isn't true that bee-keepers as a class do not use tobacco so much as others?

Mr. Kimmey: My impression is that there isn't a great deal of difference. I remember an advertisement, "This is an excellent bee-veil because I can smoke while using it."

Mr. Todd: Just for fun I stuck that question in. It came in my experience a few years ago. I came up here an amateur bee-keeper. I had a pocket full of cigars, and I tried Dr. Miller, Mr. Hutchinson and others, and I couldn't give a single cigar away in a bee-keepers' convention, and I said, "What is the matter; what am I up against?" I am not a Prohibitionist; I am Scotch; but I am going to make a break in the bee papers, and I am going to work off Socialism when I get a chance.

Dr. Bohrer: The Scotch make the best whisky.

Dr. Miller: That is, the Prohibitionist makes the best whisky. I found that out when I was practicing medicine.

Mr. Todd: I looked around for the economic reason. I said, "What prevents these men smoking?" I found that the reason was that they couldn't smoke on account of the bee-veil.

Dr. Bohrer: What has been your experience about chewing tobacco with a veil on?

Mr. Todd: I don't chew tobacco. No one excepting Americans chew tobacco and spit all over the shop.

Dr. Miller: A mere boy like Mr. Todd doesn't understand these things! If a man were full grown and commenced long ago, he would know that bee-veils in general have a hole at the entrance, and if you will look at German bee-supply lists you will see that veils of that kind are made now. They have a hole for a cigar or a pipe, and use the bee-veil in that way. When Mr. Todd grows up to a little larger size he will know that!

Mr. Todd: Thank you, Dr. Miller.

When I grow up I will be able to smoke more than I have been doing.

Dr. Bohrer: I belonged to two organizations. They had two or three bee-keepers' associations, and I belonged to the Kansas Agricultural Society, and I don't think that among all of the horticulturists of that State a dozen of them chewed or smoked, and I found it to be so among bee-keepers generally.

* Adulterated Honey.

"Any news of adulterated honey in Michigan reported in 'Gleanings'?"

Mr. Reynolds: In "Gleanings" there was a report that a large consignment of honey had been found in Detroit that had been shipped there by a firm in Philadelphia. Does any one know whether it has been confiscated?

Dr. Miller: Was not the statement in "Gleanings" that it was confiscated?

Mr. Reynolds: As I read it the government was taking hold of it. They had been notified to appear on trial and had not shown up, and, as I understood it, the government was about to confiscate it.

President York: It is an interesting case, showing that the government is after adulterated food.

Wild Rose Honey.

"Does the wild rose produce honey in quantities to be sold in the market as such?"

President York: Here is a sample labeled "Wild Rose Honey," Pacific Coast Company, California, Los Angeles, Seattle and Portland.

Mr. Todd: That is a label that you will find all up and down Oregon and over in British Columbia—"Wild Rose Honey." I have not sampled it or investigated the question at all.

President York: It is very pretty honey.

Mr. Todd: I don't think that that is pure wild rose honey. I don't think that the bees gather nectar from the wild rose, but they may gather pollen.

Dr. Miller: Where I live wild rose is very common, but I very much doubt whether an appreciable amount of honey is gathered from it, for, as Mr. Todd says, they gather pollen from it, and they may gather honey in times of very great scarcity, possibly. You don't know, but I have been most of

my life a "rose fiend," and in times of very great scarcity my rose-buds would be torn to pieces before they opened up, by the bees, and I suspect there must be some nectar there or they would not do it, but I very much doubt whether anything has ever been gathered in the history of the world that was known to be either tame or wild rose honey, and I suspect that that whole business is a fraud.

President York: This is, perhaps, simply a label.

Mr. Todd: They go—have you seen them?—for the pollen in an extraordinary way.

Mr. Dadant: Before you condemn that as a fraud, although it is quite possible that it may be, we must bear in mind that there are countries where the wild rose is very plentiful. Portland, Oregon, is called the wild rose country, and the country is covered with wild rose bushes. It is astonishing to men from the East to see wild rose bushes growing eight and ten feet high all over the country, thicker than any weed in this part of the country, and the roses bloom for quite a long while, and there might be something in it, although the syrup company's name makes me dubious.

Dr. Miller: What do you know about the gathering?

Mr. Dadant: I simply stated that roses are as plentiful there as clover here.

Mr. Wheeler: I have watched a great many times to see where the bees got their honey, and I seriously doubt their ever gathering honey from the wild rose or the tame rose. They may gather pollen, but they don't act to me like a bee on any other blossom getting nectar. I doubt their getting this.

President York: This is sage honey—California sage. It is just called "wild rose." That is just a label or brand.

Dr. Miller: You will remember seeing honey labeled "York's Honey," and Mr. York himself never gathered any, though his bees have done so.

Mr. Moore: I may add something to this that will be a little interesting. Of course, with the name "Syrup" on that we are inclined to think it a fraud. It ought to be named "Corn Blossom Honey" instead of "Wild Rose Honey." From my own reading of thirty years

I have never seen the words "Orange Honey," and it is reserved to the syrup company to be the first one to discover "rose honey." There probably is not any, only in their imagination. But I want to say that it is strictly true if you would call rose honey apple honey, for the blossoms that come from pears, apples or peaches is rosacea botanically they all belong to the rosacea or rose family. Possibly, botanically, there is such a thing as rose honey, because botanically all these blossoms are rosacea, although I don't believe that sage, taking Mr. York's suggestion, is of the rose family.

President York: It is guaranteed to comply with the pure food law of June 30, 1906.

Dr. Miller: They may comply with the pure food law and put a lot of things in, so long as they tell what it is.

Mr. Todd: Oregon has very large orchards, such as we dream about but don't often see, and one bee-keeper told me that sometimes he got a super of honey from the apple and pear tree bloom. That is the only place where I ever heard of apple or pear blossom honey.

Mr. Wheeler: There is quite a lot of bad honey being brought into Chicago at the present time. You will find it in the department stores. It is being shipped around here. It has a pretty picture on it and an attractive label, and I think the vicinity of Chicago is affected quite a little. It is quite a vital question whether this is sold as pure honey and whether the label is correct or not.

Dr. Bohrer: Does the label say it is pure honey?

President York: The guarantee I read you.

Dr. Miller: I don't want to appear antagonistic, but I hardly like to allow to pass unnoticed what Mr. Moore says. The fact, I think, is that sometimes apple honey, fairly pure apple honey, has been gathered and stored, but there is no sort of common sense that will allow that to be called rose honey, begging Mr. Moore's pardon, although it belongs to the rosacea family. In the common sense of the term an apple is not a rose. The fact that you can go back to the botanic name will not do at all. You cannot class white clover and blue bees together because—

Mr. Todd: Can you white bees?

Dr. Miller: Possibly. I won't be too persistent. Because they both belong to that class, you cannot name them together the same. Rose honey should be from the rose itself, not from some near relative, not from sage or anything else.

Mr. Kimmey: I am not quite clear in my own mind. I don't know much about bees nor much about honey, but I can't tell when my bees are getting honey or not getting honey from blossoms, and I have never been able to determine clearly in my own mind just where the honey I get comes from. We have in our vicinity (Morgan Park, Ill.) and in the northern part of this State, pretty much alike—we have a lot of golden-rod in the fall. Some two or three years ago when that was in bloom, commencing the latter part of August or the first of September, or maybe the middle of August, there was a great bloom of golden-rod, and the blossoms of the plants were literally covered, when I looked them over, with swarms of bees, apparently gathering honey, and I thought they were gathering honey. I got a lot of honey that year that was a dark color, and not very good honey. In conversation with Dr. Miller he said the bees never got any honey from the golden-rod. That is true, is it not?

Dr. Miller: Nothing to speak of.

Mr. Kimmey: This last year has been the greatest honey year, and I watched my bees closely. In the first of the year the honey was a yellow honey, a delicious honey. I thought it was from the clover, but I couldn't see them getting it. I suspect it was from the great number of catalpa trees in Morgan Park. When the white clover came in—and we have never had such a white clover season—I did not find any bees on the white clover; and then there was sweet clover, and I found the bees on the sweet clover. I cannot tell when the white clover was in the height of bloom, nor when the sweet clover season came on. When a man labels "honey" and says this is so and so he is taking a great many risks. I had a discussion last fall as to where Dr. Miller got his white clover honey last year, whether he got it from Spanish needles or where he got it. I should hate to say what it is. I don't tag my bees. I have to go out and guess at them. I have seen some on wild roses, but from what I watched

I should not suspect they brought in many wheelbarrows full of wild rose honey. It might be in forty or fifty miles, or eighty miles, where you are from me, a wild rose that they gathered honey from. I think that this is a fraud; by judging from my own experience, looking over the field as I see it, it looks like a fraud, and yet it may be all right. I would like to know if some one can tell. If you can put something in my intelligence that will enable me to tell what my bees are doing I would be glad to know it.

Mr. Moore: Dr. Miller need not feel apologetic about stepping on my toes. My toes were nowhere near. I was just simply using one way of saying they were lying. There are several kinds of lies, moral and commercial lies. If a man had a gallon of apple-blossom honey, and in each five gallons of honey he put up he put a drop of that I would not call him a commercial liar. There would be some foundation to the fact that it was rose honey. I was simply looking for a charitable manner of judging his case.

An adjournment was taken until 1:30 P. M.

SECOND SESSION.

After calling to order, the Secretary read the report of the Auditing Committee which, on motion, was approved and placed on file, and the committee discharged with thanks.

Taking Back Candied Honey.

"Should we take back candied honey?"

Pres. York: I suppose he means after it is sold, should we take it back and exchange it.

Dr. Miller: It depends upon the customer and the bee-keeper. It depends upon your trade. If you can succeed in educating your customers so that they prefer the candied honey you would be unwise to take it back. In many cases it is a question of which will pay in the long run. In many cases the objection is so strong among consumers that it will pay you well to take it back and reliquefy it.

Mr. Dadant: I think that question should be left open. If you have a customer who wants liquid honey, and after you explain that granulated honey is pure and tastes as good as the other,

he still insists on liquid honey, reliquefy it and give it back, if he wants the liquid; but I don't believe in guaranteeing it not to liquefy. I believe you can educate the people to use granulated honey, to melt it themselves, and if you do that you will save yourselves a great deal of trouble and prevent the sale of adulterated honey; for that reason I don't believe you should answer that question definitely. It depends a great deal upon the customer, and some upon the bee-keeper.

Mr. Macklin: I send a good deal of extracted honey to the grocery trade, and in each case I guarantee to take back the honey. I don't guarantee that it will not granulate, but guarantee to take it back and reliquefy it. The public demands it. Where I sell it in gallon cans to private customers, I explain to them what will happen, and never had any of them come back, and I never make any offer to take it back, but the grocery trade insists on it.

Mr. Dadant: I wish to say that perhaps it will be necessary to explain that we have always, since 1869, put a label on our cans explaining that honey does granulate when it is below 70 degrees, and I have heard customers explain to one another, "Your honey is granulated. You will have no trouble in melting it. Put it on the stove in hot water." They are trained and are accustomed to it. It takes a long time, but you can do it. I believe every bee-keeper should try to educate the people, but if he cannot, he should take it back and reliquefy it. But our circular will convince a great many people.

Mr. Wilcox: On that point, I will say I have never had to take any back; but if I lived near my customers and was delivering them bottled honey direct, I would take it back, but for the common trade, where you ship at a distance, I would never think of taking it back. I have a label printed explaining carefully how to reliquefy it, and mail them a slip and attach it in the form of a label, but they should know that all, or nearly all, extracted honey, will granulate in cold weather. I have never seen any that would not, and I have talked with large buyers of the American Biscuit Company, and they say they never have. For that reason, it is to our interest to have the public understand the fact that it does granulate, and how to reliquefy it.

Mr. Kimmey: The discussion seems,

to have drifted into extracted honey alone. A short time ago a lady said to me, "I have bought some comb honey, in sections"—I won't give the person's name, as she might be present—"and I find the honey is 'sugared,'" she called it. I don't know much about comb honey "sugaring," but I mention this to show that there may be granulated or "sugared" honey in comb honey, and I would like to know if that should be taken back.

Mr. Wilcox: I have handled a great deal of comb honey that is granulated, and I know it will granulate as readily in the comb as it will out of it, if you store it in a cold room, cold enough to crack the cappings.

Pres. York: Would you take it back?

Mr. Wilcox: If I told them it would not granulate, I would take it back or make a tag to correspond. It would not be as good. It would not be worth as much in the market.

Dr. Miller: Mr. Wilcox raises a question right there, an interesting one, and if it will not be switching off too far, I would like to have the views of the members present. He says that comb honey under the same conditions will granulate as readily as extracted.

Mr. Wilcox: If frozen hard; if it cracks the capping to admit the air.

Dr. Miller: That is another thing. It is not comb honey then, if you open into the cells with a crack.

Mr. Wilcox: It will if it is frozen.

Dr. Miller: There are several very interesting questions right there, and I wish we could get more light on them. There are some things that I am sure some of us don't know. Why does not honey in the comb granulate as readily as it does out of the comb?

Mr. Whitney: This is an interesting question, and I discovered by mere accident that I could keep comb honey right through zero weather out in a honey-house all winter without granulating, out at Lake Geneva, Wis. I used to go out when the weather was very cold, below zero, and take a case of comb honey out of my honey-house—no heat whatever, had not been—open it, and there was not a particle of granulation. I don't think there was a single section in two or three hundred pounds that I had there that I discovered granulated at all, right through the winter.

Mr. Wilcox: Mr. Whitney, you have not touched the point yet.

Mr. Whitney: I will admit that. I am satisfied with your point, that if the capping should break it would granulate.

Mr. Wilcox: If you had kept that honey a month after it thawed out you would have found it granulated, but if you take it while frozen and use it, it is not granulated.

Mr. Whitney: I think that I took some out in the spring after the winter had broken up, and the honey was as liquid as at any time in the fall. It was very fine. I was surprised to find it so.

Mr. Moore: This is certainly a very interesting question. I have handled honey over twenty-one years, and one of the troubles I have had, first, last and all the time has been the granulation of honey. A variety of things causes honey to granulate. When a man saves his comb over from the last year, my experience is that all the honey in that comb becomes solid and useless for sale. Ordinarily, there is no trade for granulated comb honey. You will find that if you take a sample of honey that is not mixed with any other it will not granulate so readily. For instance, you take honey from Iowa, from Wisconsin and Colorado, and mix the three, there is a stirring motion in handling them, a motion which causes granulation. The same thing is true of maple syrup, if you take it and commence to stir it, it granulates readily. If you don't stir it, it "waxes."

The mixing causes it to granulate, does something to the grain that causes it to granulate readily. Honey in the comb being agitated or moved stays liquid longer. Bees cap honey with a porous cover for young brood, and they cap it, as near as I can tell, with an air-tight cover for comb honey, and the air-tightness keeps the atmosphere away. It is a little bit like canning up fruit hot and air-tight, as the ladies do in canning time. It seems to me those are some of the principal reasons for the granulation of the honey, exposure to the air and agitating it in handling it, and admixture with old candied honey of the year before. I don't know if there is any cure for it. Speaking about taking granulated honey back from the customers, if the customer says he doesn't want it, if it is against reason, you take it back if you are a

sensible business man. I have been on this Chicago market for twenty years, and the Chicago people cannot learn that granulated honey is good. Out of thousands of customers I have three or four that want granulated honey. Yesterday a man told me about the honey getting thick and spoiling—some I had sold him. They cannot learn. You have to do what they want and charge them enough for what they want.

Mr. Stuebing: I believe the handling has nothing to do with it. I took comb honey out, and in about three weeks the honey commenced candying, and after four or five weeks it was harder than a brick.

Dr. Miller: Mr. Whitney must go a little farther with his statement. He said he had discovered that comb honey could be kept, and then, as the character of the man is, he sat down and didn't explain to us! We want to know what that was he discovered, whether he discovered there was some way by which he could have comb honey continue without granulating and without cracking.

Mr. Whitney: I discovered the fact, but why it was "I didn't know."

Dr. Miller: If I understand it, he discovered that we are all mistaken in thinking that the freezing of comb honey will hurt it; and I want to say here and now that our young (?) friend is mistaken in that, that it will hurt it most emphatically, and your exception in that case doesn't prove anything at all.

Mr. Whitney: I didn't say the honey was frozen. I said it was not granulated.

Mr. Wilcox: But you said it was kept in an out-building during winter.

Mr. Whitney: I have taken a two-quart jar of extracted honey, put it in an ice-box, and kept it there for weeks trying to granulate it, and it did not granulate at all. It was simply so cold that the particles of honey did not move among themselves, remained quiet, and it did not granulate, and I suppose that was the reason this honey did not granulate, perhaps, in the cold in the honey-house—whether it is correct or not I don't know. But in regard to extracted honey, I had some extracted honey that was frozen up quickly; I have got some of it now; it is two years old. I wish I had brought a little jar of it

here. It is just as soft as ice cream; it isn't hard at all. It was frozen quickly. When honey is in that condition, and treated in that way, when it granulates it will granulate very fine grain, and if you once freeze it that way I don't think you can granulate it any more.

President York: Mr. Whitney says "as soft as ice cream." I have seen it as hard as ice.

Mr. Whitney: It will pour. I have some of it in my room and take a teaspoonful every night.

Mr. Baxter: I don't believe you can granulate honey while under freezing weather, but after it has been removed from that freezing weather and thaws out it will granulate very rapidly. As to whether you had better take back comb honey—yes. Comb honey sold in the granulated condition is not marketable. But as to granulated honey, I should like to see you try to sell liquid honey where I live. If they had some liquified honey from Chicago they would gladly exchange it for some of the granulated honey there if they could get it. Down there they want honey granulated, but not comb honey.

Dr. Miller: I want to interrupt Mr. Baxter to give him an answer, perhaps, to another question. He has said that the frozen comb honey will granulate after it thaws out.

Mr. Baxter: After it thaws out.

Dr. Miller: Now the cracking, will that occur while it is frozen, or afterward?

Mr. Baxter: I would not positively answer that. I think it cracks during freezing. That is my recollection. I don't have much more to do with comb honey. I have got out of that business largely; but I produce some every year in a small way, and I know it will not granulate as long as it is frozen, and I know the same of the extracted honey. It will not granulate under freezing temperature. The moving of the honey will not granulate it, but the moving of the honey while it is granulating will make large, coarse grains in the honey; move it often while it is granulating, and it will make large grains. If it is in a barrel, move it around, or if in a can, stir it.

Mr. Wilcox: A few years ago I produced comb honey exclusively and largely, and it would always freeze in the winter if I did not take it into a warm place, and where it did freeze

it expanded from the end that cracked, and remained open just so much until it thawed, and it did not granulate until it thawed out and the crack closed or began to close, and in a little time after that it began to granulate; and if it cracked from corner to corner, as it often did, it would granulate along that crack one or two rows of cells and no more. It won't granulate any more than where it is cracked to admit the air through the capping.

Mr. Dadant: I see we have drifted from whether we should exchange granulated honey, to the causes of granulation. I wish to say that I don't believe that all honey granulates alike. European bee-keepers would tell you, if they were here, that it sometimes granulates in the hives within three or four weeks after it is harvested. That is something that says we must not be too sure of anything. We will have some honey that will granulate, and some side by side that will not granulate. The quality of the honey, the kind of blossom, all have something to do with the granulation or lack of granulation.

Dr. Bohrer: It occurs to me that the terms of the contract would have something to do with it. If I were going to sell a large amount of honey and it was granulated, I would so inform my customer. If he was a shrewd business man, he would ask me whether it was granulated or not, and if I told him the truth, whether it was granulated or not, that should cover the ground as to whether I should take it back or not—the terms of the contract.

Mr. Kluck: What little honey I produce is almost all in the extracted form. In the winter time, all the honey I sell is sold in the granulated form. The customers I have, I educate, and teach them how to reliquefy it. I have had a few customers that wanted me to take it back, and those few customers I would sooner lose than keep, they are so few. All the extracted honey I sell in the winter time is in the granulated form, and if they want it in the liquid form, they reliquefy it themselves, because I tell them how to do it, and I should prefer to educate them rather than to do it myself.

Mr. Baxter: I don't believe that is a good business principle. You should try to please your customers. If a customer came to me, and I sold honey

to him in the liquid form and it granulated, and he found he could not sell that honey, even though I had told him it would granulate, it would be to my interest to take it back and reliquefy it, so as to please him. You should please your customers so as to make as large sales as possible.

Mr. Moore: You are absolutely in the hands of your customers if you propose to hold them as customers, and I have taken back thousands of bottles from Chicago grocers. Where you are going over the ground time and time again, it is not much trouble to take it back, and you can reliquefy hundreds of bottles more easily than the grocer can reliquefy one or two. I have seen grocers whose sales were stopped by two or three bottles of candied honey. It is to your interest to take them back and give them liquid, and it will sell.

How Bees Ripen Honey.

"How do the bees ripen their honey?"

Dr. Miller: I don't know.

Mr. Wilcox: I must say I don't know, but I would like to learn. I want to know because I have read several times that bees took their honey and ripened it after it was stored in the hive. I have heard statements that they did it before they stored it in the hive, but I don't believe that. I want to know whether they re-take their honey into their honey sacs, and by that process they ripen it and re-deposit it; or whether it is simply a matter of evaporation by some process of the bees after it is deposited in the cell. I have some theories on the subject, but they are only theories.

Mr. Kimmey: I am going to say something, although others know more. When I go through my bees in a summer evening, I shake the comb down, and cover the ground or whatever is there with a thin liquid which I shake out, which is not the honey I find there two or three days after. I believe the bees bring the nectar, throw it in the hive and go out after another load. I believe other bees take it into their organization and the ripening goes on there. Then after they take it out of their organization there is the natural evaporation from the honey, which occurs in everything I know of that gets wet.

Dr. Miller: I think the answer to that question will be a hybrid one! A.

I. Root writes about watching the bees coming in from the field and discharging what appears to be pretty nearly pure water in large quantities. That certainly would look as if they were doing something toward maturing their honey as they come in from the field. As Mr. Kimmey says, if you shake a frame in the evening when the bees are busily gathering, it will shake out a thin liquid you don't find afterward. That proves there is something done in the hive. Now comes the question as to particulars, which is not so easily handled, and I see a man here I would like to have tell us something. He is looking to find out from me. I want to ask Mr. Dadant, do the bees—

Mr. Dadant: Let me, in the first place, give some different views. One says the bee comes in from the field, goes up into the super and deposits the honey there. Another says, as Mr. Kimmey has suggested, that the bee from the field dumps the honey into the first cell it comes to, and then other bees take that and carry it upstairs, or, taking Mr. Doolittle's statement along with it, they take it and throw it out upon their tongues and back again, evaporating in that way. Then there is still another view. What is that?

Mr. Moore: They hand it directly to other bees, that take it and put it in the hive.

Dr. Miller: The other view is that those bees which come from the field hand it directly to the other bees instead of putting it in the cells. Now, I don't know but all these different things are true. I am pretty sure—about as sure as I can be of anything—that there is some dumping of that more or less raw nectar in the comb, from the fact that you shake out that thin liquid, almost nectar; but whether or not all the other things are true I don't know. I suspect most of them are true; but I very much doubt whether a bee ever comes with a load of honey and goes up into the super and deposits it.

Mr. Kimmey: Have you not noticed that a comb may be full of that loose nectar at night, and in the morning it has disappeared?

Dr. Miller: I have noticed this, that I don't shake in the morning; I do shake in the evening, which is pretty nearly the same thing.

Mr. Kimmey: I have watched an observation hive and found that condi-

tion existing at night, and in the morning found that same comb with most of that thin liquid honey gone.

Dr. Bohrer: Isn't it a fact that a bee-hive will weigh lighter in the morning than at night? What does that prove? The bees do not leave the hive at night to carry anything out to lighten it. The process of evaporation goes on there. This is unquestionably what lightens the hive, in part at least.

Dr. Miller: That still leaves open the question, as all these different ways of evaporation would lighten the hive, whether it is evaporated one way or another. It leaves the question, How does that evaporation take place? Is it honey in the cell that evaporates? Does the evaporation take place by passing the honey from one bee to another, or by passing it over their tongues, as Mr. Doolittle says?

Mr. Dadant: I am not an observer like my father or Mr. Doolittle, or Mr. Langstroth. One sits by a hive and watches the bees for hours together. I know Mr. Langstroth did, for I saw him. Those men learned by actual experience. Some men do observe a little, spend day after day at it, and then make a mistake and get it wrong. I expect most of you have had an observation hive with the comb only, and glass on both sides. I have, and occasionally I would watch the hives, and I don't believe that every bee comes in and goes to a cell and empties its stomach, and I don't believe every bee that comes in hands it to a young bee to put it in the cell. It may go up into the super if it does not find an extra cell sooner. I believe all those different things take place.

Dr. Miller: May it not be handed to a bee before it goes into the hive at all, at the entrance?

Mr. Dadant: May be once in a while. I know that the Europeans, who are less practical in actual production, have over and over again weighed colonies of bees morning and evening, and when there is fifteen or twenty pounds during one day, there is a loss of from three to five pounds during the night. That is evaporation. It cannot be anything else. How can they evaporate it? Don't the bees put it in every cell? and then it drips out. The bees spread it in that way because it is handy and because it evaporates more readily. Don't you hear them roar in the evening if there is a good

crop? They are ventilating it; they are passing a current of air over the honey, and the air is warm, and that evaporates it. There is more than one way to evaporate it. I don't believe you can lay down any single rule. Dr. Bohrer raised the question, Is there a difference between the weight of the hive in the evening and in the morning? Our friends tell us that in the morning you cannot shake the honey out. It has evaporated during the night. That strong current of air that forces through has evaporated a great deal of the moisture, and it will evaporate more during the day, and the next day, until it is ripened.

Mr. Kimmey: As Mr. Dadant says, there is honey all over the hive, but there is a difference. Now, I don't think I ever saw any of that thin honey in the super or near the top of the comb in any frame. I find that the bees will commence sealing at the top and work down, and it seems to me, without knowing about it, as if they brought it from below somewhere, and brought it gradually up, and this ripening or evaporating process is done with system, as if there was an object in what they were doing. I always find that they commence to seal at the top, perhaps at one corner, extending across in a zigzag direction. But I always find that the thin, watery honey is near the bottom of the hive, which leads me to guess—I am sorry that I didn't see before my eyes got so poor, so that I could know what they do—but I have an idea that one set of bees takes the honey up there and seals it over.

Mr. Baxter: I wish to take exception to one statement. I am positive that the bees in a big flow of honey will distribute it all over the hive. You can't turn a single frame upside down, but the honey will flow out.

Mr. Horstmann: I have several observation hives in my apiary, and I notice that as soon as I put a super of empty comb on the top, the bees immediately commence to bring in honey. That shows that they bring it direct from the field and carry it up in the super. You will notice at night after a hard day's work, a big flow of honey, there will be an awful roar in the apiary. I have gone out many a time to hear that, and you will not find many bees at the entrance, but you would hear the roar of the bees evaporating the honey. If you light a

match at the entrance of the hive, the wind from the hive will blow it out, and I have shown people that that is a fact, and I believe it is altogether for evaporation.

Mr. Moore: You say that proves that the bee that brought the honey took it up to the super. How do you know it did not hand its load to another bee that took it up to the super?

Mr. Horstmann: It is hard to tell that. I cannot. I have a hive on scales, and have had it on the scales for three or four years, and weigh it night and morning. If a colony of bees brings in nine pounds of honey in one day, it will weigh two and a half pounds less the next morning. Out of nine pounds, two and a half pounds of water is pumped out during the night.

Mr. Dadant: I will explain why Mr. Kimmey and Mr. Baxter do not agree on this point. One produces comb honey and the other extracted. One has the bees build down and they seal it up first at the top; but if you get an empty comb, they will fill the comb all over.

Dr. Bohrer: Who knows that one bee ever handed honey to another on entering the hive?

Dr. Miller: I have seen them do it.

Dr. Bohrer: I have seen one bee feed another. I never saw one bee turn honey over to another, and that bee go and deposit it in the cell. The tendency has been to make that impression, that one bee entered the hive with a heavy load and handed it to another bee, and it deposited it in the cell. There would be no policy in that. The bee takes its load there and deposits it itself.

Mr. Kimmey: My bees, as far as I have had a chance to observe, invariably, not once in a while, commence sealing the surplus honey at the top of the frame or the top of the section. Mr. Baxter may have different bees from mine.

Dr. Miller: One time there was a horse lost and they tried to find it, and there was a half-witted fellow that found the horse. They asked him how he did it. He said he went to the stump where the horse was last seen, and he said, "If I were a horse which way would I go?" and he started and went the way he thought the horse would go, and he found the horse. If I were a bee coming in from the field with a load, what would I do with the load? The

thing I am after is to get back to the field to get another load, and if there is another bee within ready to receive my load, that is the first thing, and I would be willing to hand it to that other bee. If they are so busy and so many others coming in, then the next thing would be to dump it into the first cell I would come to. If I didn't find a cell at the bottom of the frame I would go a little higher up, and, if necessary, I would go clear up in the hive, and if there were extracting combs there, I would very likely find a place clear up at the top, but if it was comb honey or section honey, there would not be any place I could dump it there. That is what I would do. You can do what you like about it.

Mr. Kimmey: And I would be the other bee, and when you said "Dump this honey," I would say, "Dump your own honey; I am going into the field!"

Mr. Baxter: In opening hives, I have seen them come into the open box and deposit the honey in the combs there before my eyes. In other instances, with chaff hives, about twelve inches deep, the bottoms are immovable and it gets pretty hot in summer time, and although I have the three entrance holes about half way up, I have two deep boxes on top of the hive, and I have been obliged to slide my boxes back to give them ventilation, and the bees stop going in below at once, the bulk of them, and they go right in there, the nearest place they can get, into the super. If they deposit their honey in the bottom part first, why don't they go and deposit it there? That proves to me that it is not deposited in the bottom of the hive alone and carried up.

Keeping Comb Honey Over Winter.

"How can comb honey be kept over winter without cracking or granulating?"

Mr. Wilcox: I have done that repeatedly, and again and again. Set it up on top of a high shelf in a warm room where it will not freeze.

Pres. York: How many tons do you keep on that shelf?

Mr. Wilcox: As many as I need for my own eating. If I can keep one case, I can keep a thousand cases the same way. The temperature being the same and ventilation the same, the result will be the same. If you can

keep the moisture out and keep it warm, it will not granulate, it will not crack. I have some now I have kept two years.

Mr. Moore: What temperature, Mr. Wilcox?

Mr. Wilcox: I said a warm room. The temperature is about seventy or eighty degrees. If it is eight feet to the ceiling, within a foot of the ceiling the temperature would be from five to ten degrees higher.

Mr. Wheeler: What kind of honey?

Mr. Wilcox: It makes difference about granulating. Everybody knows that clover honey will not granulate as quickly as basswood. Basswood will granulate more readily than anything else.

Dr. Bohrer: Do you think that basswood honey will granulate more quickly than alfalfa honey?

Dr. Miller: I think that honey will keep as well in winter time as in summer if you have the same temperature.

Mr. Wilcox: There is the humidity.

Dr. Miller: Sometimes we are anxious to keep comb honey over winter; and I will say that I have seen comb honey kept in excellent condition, and kept where it was submitted to the most severe freezing, and all that there is of it is to have enough heat beforehand. I cannot say that the honey stores up heat, but I do know that I have seen comb honey that had been subjected to the most severe freezing and it remained all right. I saw it in two places—in Johnstown, Pa., and in Rockford, Ill., and the conditions in both cases were the same. The honey had been kept—I am repeating what I wrote a few days ago, and you will see it in print in a day or two in "Gleanings," if you will pardon me for recalling what I wrote, because I can write better than I can state it. I went to Johnstown, Pa., on a visit to my mother, and I spoke about sending her some honey. She said, "Charles, you don't need to send me any more. I have plenty left of what you sent me last year." "But," I said, "comb honey doesn't keep, and what you had last year won't be in nice shape." She said, "It is all right, just as good as when I got it." She got some of the honey, and I found the sections were just as good, as far as I could see, as when I sent it to her the previous year, and I said, "Where did you keep it, mother?"

"Up in the garret." Of course, you all know what the temperature was up there. It was freezing cold. Did you ever go into a close attic on a hot summer day? You want to get out as quickly as possible. Now, that honey had been submitted to a roasting process, if I might call it that, and after that it seemed to be just a little bit like jelly or something of that kind, very thick and stringy, and it would remain in that condition, and did remain in that condition. I don't know, possibly the man is here now who showed a sample of it in Rockford, at a Rockford convention, that had been kept the same way; and I believe if you submit comb honey to sufficient heat before the winter sets in, it will stand the severest cold you can submit it to.

Mr. Wilcox: Let me qualify the last statement. The reason it keeps is because there isn't sufficient moisture in it to expand from freezing. If you ripen it until it reaches that jelly like condition and then store it in a close, moist room until it absorbs moisture so as to restore it to its former condition, as it will do, then it will crack from freezing; but if you dry it out before freezing and it does not absorb moisture again, it will not granulate.

Mr. Todd: This story we have just had from Dr. Miller does that not seem to agree with raising extracted honey to 160 degrees to prevent after granulation, and it will stand very cool weather afterwards? I am very much interested in this question, for extracted honey out in Victoria, B. C., granulates very readily. This experience is the same as that of Mr. Selser, of Philadelphia. This granulation interests me greatly, because this honey is very dense and it granulates very readily, and after granulation it becomes of a very muddy color, and I have to face that problem.

Mr. Macklin: I should like to ask Dr. Miller whether honey that is kept over through the winter from freezing, or at an even temperature, won't be a little darker the next year than the year it was gathered, not the honey itself, but the capping?

Dr. Miller: The samples I saw I don't think had changed any in color. I can see why the honey itself should change, but I don't see why the capping should. I don't think the capping was changed any in color. I

might say this as to changing in color, although it is perhaps hardly germane. I have some honey, white clover honey, extracted, about thirty years old, that became very dark, and I don't know of anything except age that will make it dark.

Mr. Moore: Though I have been twenty-one years in this business I feel awfully modest, and Mr. Todd made a remark that reminds me of something I learned out of a bee paper only a month or so ago that I thought was worth more than a year's subscription. It says in liquefying honey it becomes dark because we scorch the honey in liquefying it. I understood you to say that in liquefying it it became of a dark, muddy color.

Mr. Todd: When it granulates in Victoria it becomes a dark, muddy color. It is of an amber color in the first place. It becomes positively horrid, and I don't want to sell it when it is so dark.

President York (exhibiting samples): That is a liquid honey, and here is the same thing granulated.

Dr. Miller: Has that been reliquefied?

Mr. Baxter: That is reliquefied, and will granulate again and again. You can hasten the granulation by putting a little of that granulated honey in it, and it will granulate more readily.

Mr. Moore: This article that I referred to went on to say that in order to prevent the overheating of the honey you would have to stir it, because on the edges where it comes nearest the hot water it will overheat and discolor. Another thing Dr. Miller spoke of: He said some people were anxious to keep comb honey over winter. I want to impress upon you all that the anxiety you ought to have is to get your comb honey into somebody's hands just as soon as possible after it is produced. Some people have been foolish enough to hold it until after the first of January, and you will never "make good" on the probable deterioration on the price you will get. You want to be anxious to get your comb honey on the market as soon as possible.

Mr. Whitney: In regard to keeping comb honey, I wish to say that I ate some honey for lunch that I took off the hive a year ago last August, and have considerable of it stored away, and it is liquid, as nice as anything I ever saw—no granulation whatever. I think you can keep it.

Dr. Bohrer: What kind of honey?

Mr. Whitney: I think it is white clover, mostly, but a little mixture. I think, if you use proper care, you can keep comb honey indefinitely.

Mr. Kimmey: What is "proper care?"

Mr. Whitney: Keep it in a warm, dry place—comb honey. I have often heard grocerymen say, "I keep my honey under the counter." I sold some to a gracer once. I said, "Where do you keep it?" and he said, "Down under the counter." I said, "You put it in the gallery under the chimney, where it is the warmest place." He said, "Is that necessary?" I said, "You will find it necessary if you want to keep the honey in proper condition for your customers."

Mr. Ahlers: I would like to find out how to stir honey in a single can when you heat it in hot water.

Mr. Moore: This article even gives a machine for stirring honey while heating.

Mr. Ahlers: In a single can?

Mr. Moore: I simply take a five-gallon can and a big spoon and stir it. The top is cut off.

Mr. Ahlers: The cans are worth considerable. I sell them for fifteen or twenty cents each.

Mr. Moore: A great many people cut the tops off the cans and stir the honey. The cans are worth less than the risk of spoiling your honey.

Mr. Ahlers: I raise the can half a dozen times, and pour off the honey as fast as it liquefies, and I heat it in an open galvanized kettle on a stove with eight holes, and heat it with dry heat. It will not candy so quickly. If you heat it with steam heat it will candy more quickly.

Mr. Baxter: Put your honey in barrels instead of in cans, and when any customer wants it liquefied you can liquify it from the barrels in an apparatus on purpose for liquefying it, without any risk. Do not keep it in the cans.

Dr. Dadant: I think I can liquefy honey in single cans without stirring it at all. Don't let the water boil.

Mr. Moore: We are in a hurry sometimes, and we get the water too hot, and then, if it is not stirred, the honey on the edges will become heated too much and will scorch.

Mr. Wheeler: I want to hear Mr. Baxter's method.

Mr. Baxter: I should take it out of the barrels and liquefy it in a liquefying apparatus, where there will be no danger of burning it.

Dr. Miller: I have attended a good many bee conventions, and I am ready to say right here and now that in Chicago I find the most interesting conventions where bees are discussed. There is, however, one thing wrong. You put on the tension and you keep it up right straight through, and try as nearly as you can to kill every fellow that is here before the session is over in the afternoon. I move that we have a recess.

Recess taken for ten minutes.

Joining the Illinois Association.

President York: Mr. Smith, the President of the Illinois State Bee-Keepers' Association, has a statement to make.

Mr. Smith: The State of Illinois has been very generous to the beekeepers by allowing them an appropriation to carry on their meetings, hold their meetings, and publish their reports, and for the suppression of foul brood. Now, it has been said that while the State Association was granted the money and had the use of it the Northwestern had not been treated as it should have been, as its members were citizens of the State, a good many of them. That impression is not true. I am here to explain. Now, we want the members of this Association, or as many as live in the State of Illinois, to join the State Association. We need your membership and your Association. We are trying to get a foul brood law passed that will give the State Inspector the authority to destroy or clean up where the beekeepers have bees that are diseased, and who object to the Inspector entering their premises. Now, we have been very careful with our finances, and the proposition is this: We propose to pay the expenses of the short-hand reporter's work of getting this meeting on record, and its publication. We propose to pay for publishing your reports, and we will combine it with our report and mail it to every member that will join our Association, upon the payment of twenty-five cents. This is taking all the responsibility, or all the expense, away from your institution, and we are willing to pay for it. We are willing to divide. The money is as much yours as

ours. We are all Illinois bee-keepers. The appropriation is made out of the public funds of the State, but it must be made through and to the Illinois State Bee-Keepers' Association, because we are the only one recognized, as we work under a charter, the same as the State Horticulturists or any other of the State organizations. I would like very much to have all of your names so that we can enter them on our list in the State Association. We are willing to divide the money with you. You get out of it just what we get out of it. I think that is a fair proposition. Don't you think so, Mr York?

President York: I think so.

Mr. Smith: We need your assistance and advice, and while you can not come and meet with us, we are willing to pay for you to send a delegate. You can delegate any one here you wish to attend our Association, and we will pay his expenses at our next meeting. Now, I would like to hear from some of the members of the Northwestern.

Dr. Miller: What would it cost us to get this report? In other words, how much is there in it for us?

President York: I, perhaps, can answer that. This Association has never paid for a single report that has been taken. Heretofore I have always done it for the American Bee Journal. But this year the State Association agrees to pay for it and have it published in their report. I have allowed them to use it heretofore. One year we had two or three hundred pages of typewritten report, which cost us in the neighborhood of seventy-five or eighty dollars, which was a very full report—the most expensive we have ever had. The Chicago-Northwestern Bee-Keepers' Association has about the longest and the best report of any bee-convention in any country. We have more questions discussed than any other bee-keepers' association. That is one reason our reports are usually long, if they are taken very full.

Dr. Miller: In dollars and cents what do you say this report would cost us?

President York: I cannot tell, but it will be in the neighborhood of \$50.00 or \$60.00, or more, if it is as long as some have been.

Dr. Miller: The membership of this Association is about how many?

Mr. Moore: The membership is very

fluctuating. There are about two hundred who have paid us their dues. At the date of this meeting there were about fifty. They let their membership lapse.

Dr. Miller: About how much money are you likely to get in the course of the year from membership; how many have paid a dollar within the last year?

Mr. Moore: Fifty-six. Of course, this was a panic year, and the worst we have known.

Dr. Miller: Let us call it \$60.00. That would be \$15.00 that you would ask us to pay into the State Association's treasury to make us all members, and we would get out of it about \$60.00. If I understand the thing squarely we are to get from them about four times as much as we pay them. I am ready to call it a bargain for one.

Mr. Horstmann: I like the proposition Mr. Smith made to us. I think it would be a good thing to go into that Association. I thought myself that we had not been treated fair. I wrote to the Secretary of the State Association once and said I didn't believe in "taxation without representation." He wrote back and took me at my word, and I have never got a report since, and I would like to have those reports. I am in favor of this Association going in in a body.

Mr. Moore: The year before that we got about \$80.00.

Dr. Miller: There was last year an objection raised, and it was a valid one. Here is an outside "barbarian" like Mr. Wilcox—I mean a gentleman from Wisconsin. (I don't want to hurt Mr. Wilcox's feelings). It is a natural thing that a man outside of the State would say, "We don't belong in Illinois." But if we can get more money out of it than we put in, it is a good thing. Now, I will tell you one thing that has a good deal of bearing upon this: Pardon me if I say that this whole thing looks a little bit like the tail swinging the dog; but we are willing to be swung if we can make enough out of it. The State Legislature counts on the State Association as being a good deal bigger than the Chicago Association; is that not so, Mr. Smith?

Mr. Smith: Yes, sir.

Dr. Miller: The State Association comes directly in contact with the Legislature. If we want laws made, and if we want to have the recognition of the Legislature, we will, by affiliat-

ing with the State society, make the State society that much stronger and larger. The word of the State Association counts for that much more. That alone, if it doesn't cost us too much, makes it so that we ought to accept any proposition of this kind, and unless there is objection from these outsiders it seems to me the thing ought to go; and at the same time I believe, when the thing is put in the shape it is, we are going to lose no money by it. I don't think these "barbarians" ought to make any objection to it.

Mr. Macklin: We are discussing this question without a motion, and in order to bring it before the meeting I would like to make a motion that we join the State Association in a body.

President York: At twenty-five cents a member?

Mr. Macklin: Twenty-five cents a member.

Mr. Smith: Now, we would be willing to take you all by the hand and say come in, without paying a cent, but we cannot do it; our constitution won't allow it. We cannot allow any one to join for less than a dollar, but if they come in as an Association they can join in a body by paying twenty-five cents apiece. You will all be members of our Association. You will receive just the same as the rest of us. You can have a voice in our meetings. You can send your delegates if you cannot come; those that live in the State, and those outside of the State will get our reports bound with yours and mailed to you for twenty-five cents.

Dr. Bohrer: I don't live in Illinois, and would not for a good deal, because I have a better home than Illinois has for me. I like Kansas much the best, and I don't care anything about my membership that this Association wants here, but I think it is the right move for this Association to join the State Association in a body. You want a foul brood law in this State, and the more members there are and the more they act in concert with each other, the more certain you are to get that law. You want to put a word in the ear of each member to write to his State Senator and member of the House, and say what you want and why you want it. We get no appropriation from the State of Kansas. I have even tried to get the Horticultural Association to go with us, and when I went to express myself I was rapped

aside and informed that that was not a bee-keepers' association, but I scared the parties out on that, and we will receive recognition there. What you want to do is to act in concert and get your members to write to the members of the Legislature, and, if necessary, to send a committee to know what they are thinking about, and labor with the members of the Legislature, and especially influential members; and if you find a man opposed to a foul brood law, do as I know of another man doing, who met a man on a horse in the road and said, "You are the blamest faced man I ever saw in my life." "Can I help my looks?" "No, but, blast it, you can stay at home." Tell these men to keep still if they don't want to do anything for themselves or anybody else. Don't allow this wholesale rotting of colonies of bees all over the country to go on. If there is a man here who is opposed to a foul brood law, I want to hit him square between the eyes.

Mr. Moore: I want to call the attention of the Association to the financing of this proposition. It has to be financed, if we are going to join the "National" in a body and pay them fifty cents, and the Illinois State Association in a body and pay twenty-five cents—that means that you are going to pay seventy-five cents out of each dollar that is paid in here. It won't reach. I have been eleven years in this position. If I offend anybody I am sorry. When people come to Chicago and pay fifty or fifty-five dollars for themselves and their family here to hear this discussion every one should pay a membership fee. If fifty or sixty come here it is not right for twenty or twenty-five to pay their fees and the rest not. Things have to be financed. I don't propose to take any salary for this past year. That makes seven or eight years I have served without compensation. I am in love with the industry. I couldn't keep house without bees, and my wife feels the same way, and we are bee-people. But these things have got to be paid for. I hope you will take this to heart and not be offended. Every one who comes here and enjoys these discussions should pay the little sum of money, and then there will be money to finance things.

Mr. Wilcox: I suggest that we levy a tax of thirty-five cents upon every man who don't bring his wife, and fifty cents on every one who does.

Mr. Macklin: My intention when I made the motion was that we would all put up twenty-five cents in addition to what we pay to the Northwestern Association, but I don't say so, although that was my intention.

Mr. Baxter: I want you to understand that I don't want to belong to the State Association twice. I belong to it, anyway, and don't want to join through the Northwestern.

Mr. Kimmey: About this time, and as is often the case, I am a little muddled. Dr. Miller has said I would make money by joining, and Mr. Moore said I would lose money by joining. I would like to sit down and think it over a while. Does the motion include the twenty-five cents extra?

Mr. Macklin: With the consent of my second.

Mr. Wilcox: Yes; twenty-five cents extra.

President York: This motion carries with it an extra fee of twenty-five cents, so that the dues will be really \$1.25—this Association fifty cents, the National fifty cents, and the State Association twenty-five cents.

Mr. Winter: Is that every year, or just this year?

President York: Just one year at a time.

Mr. Kimmey: Have we any constitution and by-laws?

President York: Yes, sir.

Mr. Winter: Does the constitution fix the yearly dues?

President York: This has nothing to do with the dues.

Mr. Kimmey: I paid a dollar. If I refuse to pay the extra twenty-five cents, where am I?

President York: We will put you out! [Laughter].

Mr. Kimmey: You can not do it; I don't know, it strikes me as if we had better not get into this muddle.

Mr. Moore: The dues were fifty cents to start with, and they were amended to make it \$1.00.

Mr. Kimmey: It should be an amendment to the constitution. It cannot be done this way.

Mr. Smith: You say your finances would not reach \$15.00?

Mr. Moore: We were ten cents in the hole up to today.

Mr. Smith: What have you done with the revenue you took in today?

President York: We have that here.

Mr. Smith: How much was taken in today?

Mr. Moore: \$32.00.

Mr. Dadant: Mr. Smith, what are the annual dues to the State Bee-Keepers' Association?

Mr. Smith: The annual dues are \$1.00, and half of it goes to the "National."

Mr. Kimmey: Am I not a member? I hand you a dollar. I am a member of the State Bee-Keepers' Association. The dollar includes my membership in the "National." You take that dollar and enroll me in the Illinois State Bee-Keepers' Association. What appropriation do you get from the State of Illinois?

Mr. Smith: The appropriation has been \$1,000.00 a year.

Mr. Kimmey: Do you make any report of what you do with that money?

Mr. Smith: There is a report made to the Secretary of State and to the Association.

Mr. Kimmey: I have belonged to associations of that kind, and I was not satisfied with what they did with the money. It seems to me that a thousand dollars is a small amount of money, and you will be looking for money, instead of spending it. It seems to me there is no question but that we should join the State Association in a body, and if anybody is like Kimmey and wants to pay a dollar outside and pay it for the good of the cause, let him do it. Let us go ahead and join this Association, even though we may come short in this institution. I think there ought to be seventy people in this room who will pay their dues and give Mr. Moore the \$70.00 he requires. It will take \$35.00 to join the National, and there will still be enough to run this Association after we have done it. I don't think there should be any hesitation about passing this motion.

Mr. Baxter: The motion isn't a dollar, but \$1.25. This brother and I have paid that dollar to the State Association for membership, and now they are going to take us in again on the cheap plan of twenty-five cents.

President York: Whoever is a member we would not need to pay twenty-

five cents for. The Secretary can find out who already are members and pay only for those who are not members.

Dr. Miller: I think the motion to make the dues \$1.25 in contravention to the constitution is wrong. If your constitution says a dollar, leave it a dollar. Don't say twenty-five cents for joining the State Association. What is your warrant for levying it?

Mr. Wheeler: Didn't Mr. Moore say that he worked for the last year without compensation?

Mr. Moore: Out of eleven years I have worked seven free.

Mr. Wheeler: I thought each year we voted for Mr. Moore to be compensated.

Mr. Moore: After I had worked seven years I was voted a compensation for one year.

Dr. Miller: I think we ought to avoid what seems unconstitutional. It seems to me that practically we are changing from \$1.00 to \$1.25. If I understand Mr. Kimmey, his idea is this—if I misinterpret him let him speak for himself, he is of age: If we pay up as we should there will be no trouble. If every one who attends here pays in his dollar—do I understand you correctly, that if every one pays in his dollar who attends here there will be no trouble on the financial question?

Mr. Moore: I don't agree.

Dr. Miller: If there is a possibility of getting through this thing and leaving that dollar stand where it was we ought to do it that way. I might be forced into paying an extra twenty-five cents if you insist, but I would like to get through and really not pay more than a dollar, and if we can do it that way and get more in, I would like to do it.

Mr. Moore: Last year we got in \$56.00. Suppose we get in \$60.00. Thirty dollars goes to the National, \$15.00 goes to the State, leaving \$15.00 for the year's expenses, which is \$5.00 less than we have to pay for this room for two days. Suppose you run it up to \$80.00—that leaves \$20.00 for this room, and not one cent for postage and other expenses for the year.

Dr. Miller: How much would that leave us in the hole?

Mr. Moore: Year before last we took in \$79.00; last year, \$56.00. At

\$80.00 you pay out \$60.00 to these two associations, leaving us \$20.00, which is what we pay for this room for two days, and leaves us nothing for the year's expenses and for postage, which would be \$5.00 or \$10.00 for the year.

Dr. Miller: About how much in the hole?

Mr. Moore: Twenty dollars would cover that. If we were assured of that we would feel pretty safe.

Dr. Miller: What is the biggest thing we would be in the hole if we stick to the dollar?

Mr. Moore: We have got to jump from \$56.00 to \$79.00. If we get \$80.00 we would still be plenty in the hole. We are about \$25.00 or \$30.00 in the hole on the year's expenses. That don't count my compensation anything.

Dr. Miller: Now, Mr. President, that twenty-five cents I don't believe in being forced to pay. A dollar I have paid, and I am willing to stand by that, and I don't want to pay a cent more in that way. I believe there is a mistake in these figures, and believe they will come out better than they look. If you will let me off without paying that twenty-five cents I am ready to pony up to \$30.00 to get us out of the hole. I won't pay you that twenty-five cents!

Mr. Whitney: Is there any constitutional objection to individual members of this Association donating twenty-five cents if they want to? It seems to me that we can make up the twenty-five cents or the amount necessary to join.

President York: If this Association wants to vote twenty-five cents a member and pay it out of the treasury they can do it, constitution or no constitution.

Mr. Whitney: To accommodate Dr. Miller I was going to suggest that we join the State Association and recommend that every member pay his twenty-five cents, and those that don't we will pay for out of the treasury, and not force anybody to pay it. The motion should be changed to join in a body at twenty-five cents.

Mr. Kimmey: I move that the Secretary be instructed to notify the members next year, thirty days before the annual meeting, of the proposed change in the constitution, making the annual dues \$1.25 instead of \$1.00.

Motion was seconded, put and carried.

Joining the National—Election.

Dr. Miller: I move that this Association join the National Association in a body, the same as last year.

Mr. Baxter: Except those that are already members of the National.

The motion was seconded, put and carried.

The election of officers was then taken up, and all were re-elected for the ensuing year as follows:

President, George W. York, of Chicago.

Vice President, Miss Emma M. Wilson, of Marengo, Ill.

Secretary-Treasurer, Herman F. Moore, of Park Ridge, Ill.

Mr. York was elected as delegate to the State convention.

Mr. Kannenberg: I believe we always vote Secretary Moore an allowance for the year for what he has done for us. I move that we allow him \$20.00 for his services for the last year.

The motion was seconded.

Mr. Moore: I stated that I would not accept any compensation for the last year, owing to the condition of the treasury.

Mr. Horstmann: I am willing to give my share toward paying it, for I don't believe in running the Association into debt. Let the bee-keepers pay up well this year, and we will come out all right.

The motion was put and carried.

Oldest Bee-Keeper.

"Who is the oldest bee-keeper present?"

President York: I take it that this question means who has handled bees for the longest time.

Dr. Bohrer: There is one other gentleman who has handled bees longer than I have, which is fifty years, and that is Mr. Baldridge. Mr. Baldridge and I were in the first convention at Indianapolis. I know of no one else.

President York: Mr. Baldridge, how many years?

Mr. Baldridge: Fifty-three.

Mr. Stuebing: I have taken care of bees for sixty-two years. When I was eight years old I came over here to America and I bought three colonies of Mr. Williams.

Dr. Miller: I commenced keeping bees sixty-nine years ago. I had a colony of bumble-bees. Then I took a long vacation, and you can't fairly count me with the older ones.

Medicinal Qualities of Honey.

"What medicinal properties of honey will help its sale most if they are known?"

Mr. Holbrook: I should be glad to have the Secretary read an extract from a marked article by C. W. Dayton in the Bee-Keepers' Review, in answer to this question.

The Secretary then read as follows:

"If, on rising in the morning, we work or exercise for three or four hours without breakfast, we may feel a somewhat painful emptiness in the stomach. If we pay no attention to it, after two or three hours a slight headache, toothache, backache, rheumatism, or any other ailment which we have been troubled with, will start up. This is the certain evidence of diseased digestive organs. The cause of the disagreeableness is mucus mixed with secretions from the diseased digestive organs during the preceding night, which form a very injurious ferment. If we eat breakfast it will stop the gnawing sensation in the stomach, and the food will absorb the contaminable substance, but only a small part of the food can digest. Undigested, it will contaminate the whole system, and excite to activity any old disease by which we may have been previously attacked.

"Take a small bowl of water at a temperature of 50 or 60 degrees. Stir into it three tablespoonfuls of evaporated milk or six of Jersey cow's milk and a quantity of mild-flavored honey the size of a walnut. Sip with a teaspoon. Don't think that if a little milk is beneficial more is better. The efficiency of this mixture depends upon withholding the milk. More milk will cause it to be digested. Being neither food nor drink it will quickly find its way through the digestive organs. Honey contains nutrition and imparts strength, but, being already digested, it excites no digestive activity. Pure water would be absorbed into the vascular circulation through the walls of the stomach if the system were lacking moisture. Milk cannot be digested in the stomach, nor can honey be handled in the intestines. The de-

bilitated condition of the digestive organs causes the pylorus (outlet of the stomach) to remain unclosed until ingested nutrition, or else nutrition pumped from other parts of the body and carried to it by the blood, enables the pylorus to resume its action. If a meal is eaten while the pylorus remains in this inactive state a part of the food will go directly into the intestines and become a most contaminating material.

"In twenty minutes to an hour after swallowing the above mixture there will be a movement of the bowels by which you can detect the truth or wrong in the foregoing statement. In one or two hours later the natural hunger will assert itself in an unmistakable way and the organs of digestion will be prepared to properly care for it."

Dr. Miller: What is the medicinal quality he has been telling about?

Mr. Holbrook: I might say from the time I commenced to sell honey I recommend as a remedy a pint of hot water with a tablespoonful of honey and six tablespoonfuls of milk, and week after week reports of relief from stomach trouble commenced to come in until I felt perfectly safe in giving that out as a remedy. In a great many cases we used it as a leverage to start to sell honey. I have found it to be the best starter. There is scarcely a family that does not have some one who has stomach trouble; and I think if you get this started as a medicine they are so pleased that they have recovered that they cannot do enough for you. I know that was my experience, and I believe the same thing will work in every town, and after you get their friendship it is easy to push the sale of honey as a food. Mr. Todd said his wife had been drinking fermented honey for a few months and had gained something like twenty pounds in weight. It will stand thrashing out. There is something in it.

Mr. Moore: I am selling honey constantly, and I am preaching to all my friends that honey with a great many people is better than an equal amount of sugar, and I think the older we become our digestive organs are weaker. Honey is better than sugar, that is, for the people with whom honey agrees. You will find if you substitute honey for a given amount of sugar it will lengthen your life, and I am preaching it to my customers.

Dr. Bohrer: When I was President of the Kansas Bee-Keepers' Association a physician came into our meeting and wanted to know what the fees were for becoming a member. It was a doctor in Topeka who came in, and he said the reason he wanted to become a member was because he wanted to study the habits of the honey-bee, and wanted to start a large apiary in Missouri to procure pure honey for patients suffering from the white plague, that is, consumption. He said it was conceded among physicians that honey as an article of food and as an ingredient in the medicines they used was the most valuable of all the sweets in the world. The Governor has called a convention to meet in Topeka in the House of Representatives on the 3d and 4th of this month. I want to go down there to see what is being done. A camp for consumptives is being run in the hills near Topeka. One of the secrets of it is to have the patients sleep in tents as much as possible and to get up into a higher and drier atmosphere; but honey, they claim, is going to prove valuable for consumptives. As a practitioner I found that as an ingredient in cough syrups it is the most valuable thing I can get hold of. It is coming to the front, and will supersede almost anything else, and an extensive demand is likely to be had for honey for this purpose. The white plague in this country is increasing, and if there is anything in the way of diet or drugs suited to patients of that kind it is a good thing, as it is getting to be the bane of the country; it causes more fatal sickness than any other one ailment in the country. I call attention to this for what it is worth. It is now attracting the attention of our ablest scientific men in the medical profession.

Dr. Miller: I suppose if you were to ask the average physician about it he would probably look at you in surprise if you would ask him whether honey was a good thing for consumptives. He would look at you in surprise and perhaps give you an evasive answer, and if you asked him what was the right thing he would tell you cod liver oil, and cod liver oil is the standard thing. Physicians will tell you they know that the amount of nourishment got from that is what is wanted to help a consumptive patient. And I have wondered many a time for years why they couldn't get it into their

heads that honey with practically the same composition, the same materials only in a pleasant form, could be substituted—a delightful article of food—for the exceedingly disagreeable cod liver oil. They take cod liver oil disguised in all sorts of ways. Now, it appears from what Dr. Bohrer says, and I confess it is news to me, and a delightful thing to learn, that they are awakening to the fact that honey may take the place, with consumptive patients, of cod liver oil. It is a good thing for us to tell, and to talk about it, for there are people who need something of that kind all around us—very few that don't.

Bee Dumping Its Load.

"How long does it take a bee to dump her load?"

Mr. Wilcox: Several years ago I had wild bees. I took out my watch and timed them, the time a bee started from its home and returned, and from its first base, and I believe, as a terminated the distance it probably was from its first base, and I believe, as a rule, five minutes was about the shortest time from the time the loaded bee started with its load until that same bee returned again. In case they were two or three miles away the time was about an hour—rarely under five minutes. I have known one to return within four minutes, but in all cases the tree was near by, so that the time must have been taken principally in unloading.

"Does Honey Freeze?"

President York: You will have a good time to try it within the next two or three months.

Dr. Miller: How are you going to tell whether it is frozen or not?

Mr. Moore: I would like to ask if any one says that honey does freeze. I believe honey will not freeze under any circumstances. But does honey freeze, and what bearing does that have on our interests?

Mr. Wilcox: That question has been discussed, and it has been repeatedly stated that honey does freeze, and a good many members have seen it when it has frozen so that it expands when the capping cracks. Marketable honey such as we call honey certainly does freeze. If there were no water in it at all I am not sure it would expand any on account of the cold,

I am not sure it would congeal any harder, but I suppose it would. I suppose by freezing you mean congealing hard as ice.

Mr. Taylor: The thing is to determine what is freezing. When you tackle that it will settle the whole thing.

Dr. Miller: I think Mr. Taylor is right about that. As ordinarily used, when a beekeeper says his honey has frozen he simply means that it has been subjected to a degree of temperature at which water freezes. In other words, if you would ask if honey has frozen when it has been out in zero temperature, I would say yes. Whether that would agree with the scientific degree of freezing or not, I don't know, but in ordinary language, when it has been down to that temperature we say that honey has been frozen.

Mr. Whitney: As I stated in a former talk about freezing honey—the can that I spoke of which was kept in an ice box for a long time, the honey would flow as I turned the can upside down and right side up, without any evidence appearing that it had frozen at all. In the common acceptance of the term, I could not freeze it—kept it there a long time—and yet that extracted honey would run whenever I turned the can.

Mr. Moore: By freezing do you mean granulating?

Mr. Whitney: No; it was liquid honey when I put it there it was liquid all the time, didn't granulate, and as we commonly speak of freezing, it didn't freeze. We thought we couldn't freeze it.

The T-Super and Others.

"Did Dr. Miller bring a T-super of honey? If not, why not?"

Dr. Miller: I didn't see that sufficient good could be done by it. I did bring one other thing along. I am always willing to show it when you want to see it.

Mr. Moore: I was ordered to notify everybody to bring in their supers of honey, and to give each one a dollar who brought to this meeting. Two or three months ago Mr. Taylor wrote to the secretary and asked him what had been done, and up to that time nothing had been done. A notice was published in the bee papers, but no

one paid any attention to it. Mr. Taylor wrote a week or so ago and asked what had been done, and I told him he was the only one who had paid any attention to it.

Mr. Kimmey: Mr. Taylor has the super here, and I suppose his object was to exhibit the manipulation of it before us. I think it would be well to set some time when he could do that, and I think a good time would be this afternoon or evening. His exhibiting it this afternoon may induce some other brother or sister to do the same thing to-morrow. There is nothing else that will interest me more than to have Dr. Miller exhibit his super, and I would like to see Mr. Taylor's, too.

Dr. Miller: Allow me to amplify my answer by saying that I couldn't bring a super of honey as desired because the idea was to get it as it came from the hive. I have not a super of honey as it came from the hive.

President York: We will call on Mr. Taylor to exhibit his super of honey.

Mr. Taylor: This case just came from the hive. It is a section out of the case. Some laugh at me because I take them out with my thumb nail.

Dr. Miller: Can you tell us when it was taken from the hive?

Mr. Taylor: I cannot tell the day; I can tell about the time. It was probably about from the first to the seventh of July. You can see how it is done, and how clean it keeps the wood—very little scraping to do, and no comb starters.

A Member: Why not, Mr. Taylor?

Mr. Taylor: Why not? What's the use?

A Member: Is there any objection to them?

Mr. Taylor: Yes; it takes a lot of time.

A Member: Is that a super just as it came from the bees?

Mr. Taylor: Exactly the same—just as it came out.

A Member: Never been opened before?

Mr. Taylor: No, sir; never opened until just now.

A Member: Wasn't that produced on a Heddon hive with one story?

Mr. Taylor: Two stories.

A Member: What is the name of the super?

Mr. Taylor: I don't know any name but the Heddon wide-frame super. What is Heddon about it is these side screws. If you want to, you can put the sections in, and when they are pretty well done you can turn the case over, and you get the sections filled up. The sections are four pieces, seven to the foot, dovetailed.

A Member: I would like to ask if that super has ever been inverted?

Mr. Taylor: Yes, that was inverted.

Mr. Moore: What was the object of inversion, Mr. Taylor, to get them better filled all over?

Mr. Taylor: Yes.

Mr. Moore: I would be interested to hear just what the points of advantage are over ordinary supers, or other supers.

Mr. Taylor: Over supers that don't have the wide frame, of course it keeps the section cleaner. You will leave the top and the bottom intact; and you may sandpaper and scrape it, but you never can make it like the wood, at least I never could.

Mr. Moore: You find no necessity for cleaning them at all in order to sell them?

Mr. Taylor: Of course, you give them a little scrape and take off what you see. You invert the super. But I don't always invert them.

Dr. Miller: At what stage of advancement do you invert?

Mr. Taylor: Just as soon as the combs will stand up.

Dr. Miller: With regard to the expansion in wet weather. I would ask whether it ever injures the case on being screwed up tight.

Mr. Taylor: No. These sections are not basswood; they are poplar. It makes quite a difference. I have used basswood where they would swell sufficiently to push the case open.

Mr. Whitney: How much of a starter do you use, the full sheet?

Mr. Taylor: Full sheet, full as I can. It doesn't touch the bottom quite.

Dr. Miller: About what margin do you leave below?

Mr. Taylor: About three-sixteenths, I try.

Mr. Frank: What weight of foundation do you use?

Mr. Taylor: I use my own make.

Mr. Frank: What is the weight of it?

Mr. Taylor: The weight is about ten to twelve feet to the pound. I can make it thinner, but I don't like it thinner than twelve.

Mr. Whitney: At what stage of progress do you invert it?

Mr. Taylor: As soon as the foundation will stand up.

Mr. Bodenschatz: I should like to ask Mr. Taylor what he does when he finds more glue on them. I should think they would stick more or less to the frames.

Mr. Taylor: They cannot get any more on this.

Mr. Bodenschatz: They will get some on the edges.

Mr. Taylor: There is some on this.

Mr. Bodenschatz: I should think if they would stick more, it would break more sections pushing them out.

Mr. Taylor: No; it doesn't break any.

Mr. Jones: I would like to ask Mr. Taylor in regard to the spaces. Is there a full space above and below?

Mr. Taylor: Half space each, half space below and a half space above.

Mr. Jones: When they are inverted the same spacing will be there?

Mr. Taylor: Yes.

Dr. Miller: How much do you call a space?

Mr. Taylor: Three-eighths is what I call a space. Of course, I don't always get it.

Mr. Wheeler: You wrote to me last spring and said you were going to try some bottom starters. Did you do it?

Mr. Taylor: Yes; I tried a few.

Mr. Wheeler: You don't like them?

Mr. Taylor: No.

Mr. Wheeler: This was an extra good honey flow. Don't you think there would be an advantage another year with a poor honey flow, or with a moderate honey flow?

Mr. Taylor: I don't think there would. Of course, there would be in some cases; but with my foundation it is quite difficult to do that.

Mr. Wheeler: Won't it stand up?

Mr. Taylor: If the foundation is

hard you can do it. My foundation is soft, and it is more difficult.

Mr. Wheeler: What makes it differ?

Mr. Taylor: I suppose it is the machine. I use the Given press.

Mr. Wilcox: It is the process of making, then, that makes the difference?

Mr. Taylor: I think so.

Mr. Wheeler: Do you think that your foundation extends down to the bottom?

Mr. Taylor: Generally it will unless there is a poor flow. I have noticed that with my foundation they draw it out more readily than the ordinary foundation. With a hard foundation they will build out the cells, but they apparently don't like to extend the bottom.

Mr. Whitney: On this subject, I have a short paper that perhaps might come in here, and if it won't bore the members too much, I would like to have it read.

Mr. Kimmey: I understand that Mr. Taylor gets a dollar for this, which is small compensation for what he has done for us. In addition, I move that we give him a vote of thanks.

The motion was seconded, put and carried.

Dr. Miller: It seems to me the thing is all right without remarks. He is the only one who has enterprise enough to do anything of the kind.

Mr. Taylor: The dollar, of course, will help me to pay the expenses of getting that here, but I don't want to lug that to Chicago again for a dollar, but the vote of thanks will recompense me.

President York: He will no doubt sell the honey for twenty-five cents a section.

Mr. Taylor: I will sell it for fifteen cents a section.

Mr. Horstmann: I will take the whole case.

Dr. Miller was then asked to show his exhibit.

Space Under Bottom-Bars.

Dr. Miller: The question is, what is the proper depth or space there should be under the bottom-bars, and we have been in the habit of having something like three-eighths of an inch, and at one time or another in

the course of a year a good many of us seem to think—while I happen to think of it, there is a pair of common pocket scissors. I don't know of anything more convenient than that for clipping queens' wings. Those are in my pocket all the year around.

A Member: Ever prick yourself on them?

Dr. Miller: I can't because I carry them in my trousers' pocket all the year around. I only mention that because it is often spoken of that you must have a sharp-pointed pair of scissors for clipping queens' wings.

A Member: What do you want to clip their wings for, Doctor?

Dr. Miller: So that they cannot fly. Latterly the idea seems to be gaining ground, at certain times of the year at least, that it is desirable to have a larger space under the bottom-bars. A few years ago I invented what was called a reversible bottom-board. It is now called the Danzenbaker bottom-board. What change has been made in it to warrant that change in name I don't know. At any rate it was a reversible bottom-board having one side so that there would be between three-eighths to half an inch between the bottom-bars and the floor, and the other side so there would be a larger space. I used that with no little satisfaction; but it was a good deal of trouble to lift the hive off and change the board, so that, although it was convenient, I have gone back on it and wanted to have something easier, and I finally came to have a bottom-board so deep as to allow a space of two inches between the bottom-bars and the floor. The objection to that is that while it gives you a fine space under for winter—and I find that two inches is none too large a space to allow things to be kept clean under there—during the time the bees are at work in the summer there must be something to prevent their building down, and I used for several years a box, simply a box turned upside down in there, which made a solid floor, and they couldn't build through. Well, I wanted something that would allow the space there, and that would keep the bees from building down, but still allow the air, and finally the thing that has suited me better than anything else is just what you see there. All there is of it is two sticks and

slats across, and there is nothing special about them. I happen to have two top-bars, but a straight stick of any kind will do, and then the slats across. There is no trick about it. All there is to it is to have something that will come within an inch of the bottom-bars, and it took me some time to come to it and feel that I was safe in having as much as an inch during the building season, and I am none too certain that I can always have that amount of space. So far, I have had no trouble with that.

A Member: Does it sit under the hive that way?

Dr. Miller: Under the brood-frames, on the bottom-board. Understand, there is that space of two inches from the bottom-board, and that will stay two inches—for instance, it is two inches now. That gives me that two inches during the winter in the cellar, and it will stay two inches until dandelions are in bloom and there is danger of the bees building down; and when dandelion bloom comes this device goes under to prevent the bees building down, and stays there until the harvest is over and all danger is over.

Mr. Wilcox: Did you ever try one thicker at the back end than at the front, so that the space would be deeper at the front than at the rear?

Dr. Miller: No.

Mr. Wilcox: I have used such a hive.

President York: What do you call it?

Dr. Miller: For want of anything better, I have called it a "bottom rack." The other thing I called a "false bottom," but this could hardly be called a false bottom. I call it a bottom rack. I would be much obliged if anyone would suggest a better name.

Mr. Baxter: I suppose this is exclusively for producers of comb honey, but you would not suggest that at all to people who produce extracted honey.

Dr. Miller: Why?

Mr. Baxter: You don't suppose they would ever build under the bottom-boards in my hives. I raise my hives every spring, put a block under at least an inch high, and there is over two inches space between the bottom-bars and the bottom of the hive.

Dr. Miller: Most certainly there would be a difference, and there is much less chance of it, and Mr. Dant has given the answer. After your combs are built and you have nothing but fully drawn out combs, while they are building those combs. I should be afraid there would be a little crowding there. At any rate, I would not insist upon it that Mr. Baxter must use it if he does not need to. But for those that want that space, I suggest you can have the advantage of that full two-inch space without having any building down.

Mr. Baxter: I can see it would be necessary in the Langstroth hive, but in the Quinby hive I have never seen any building below.

Dr. Miller: If Mr. Baxter has worked the Quinby hive long enough, working for comb honey, and has found year after year that they don't build down, I will accept his word; but I suspect that no matter how deep the frame, if they are crowded enough to work in sections, they will prefer building down under a part of the time.

Mr. Whitney: Have you observed, Dr. Miller, that the bees build down the comb in the brood-chamber to the bottom-bar any better with that rack under than before?

Dr. Miller: Theoretically they do, but practically I don't know.

Mr. Whitney: We all know who have observed the work of the bees.

Dr. Miller: I have not the chance to know because I am not sure I have had a comb built down since I have used that.

Mr. Whitney: We know that bees do not always build down to the bottom-bars in the brood-chamber, especially in the center, because there is a cool current of air under the bottom-bars so that the bees cannot well work the wax where the bottom-bars come so near the bottom-board. I know that in my observation of my own cellar, if I put those combs to one side, and on the line of the entrance where the air comes in, they will build down to the bottom-bars.

Dr. Miller: I might say that my opinion would be that they would build down better with this than with the ordinary shallow space, because the rule is that this inch space under the bottom-bars is filled entirely with

bees. There is a cluster of bees down, and bees under this, and that being the case, I should think they would build down better.

Mr. Wilcox: Would you rather have those bees under than to have them up on the combs?

Dr. Miller: No; but if they want to go there, I would not object.

Mr. Wilcox: I have used a chaff hive, which has a bottom-board with a space one and one-fourth inches at the front end and only a quarter of an inch at the rear end, and I like the hive very much on that account—it is easier for the bees to keep it cleaned out.

Mr. Holbrook: Isn't that more helpful in preventing swarming than any other device?

Dr. Miller: I think that is an important part of it, because the giving of abundance of space underneath helps to keep the bees cool, and that does just that much toward preventing swarming. I think it helps very much in that way.

Mr. Holbrook: In your case, that is what you use it largely for, is it not?

Dr. Miller: I use this to keep the bees from building down. I use the large space to give them air, and that helps to keep down swarming. Perhaps I had better go a little further and say that I can have the large space without this, but if I should attempt to run that two-inch space through the summer I would only have three-eighths of an inch space, because they would commence building down, and if they commence they don't stop at an inch from the floor, but go down so that there will be only a three-eighths space, but if there is only an inch to start with they won't begin building in that space. I may get caught some time and find they will build a little in that inch space.

Mr. Baldrige: Is it not a fact that if they do build below the bottom-bars in the brood-frames they will build drone-comb mainly, or to a great extent?

Dr. Miller: They will to a great extent. I have had a good deal of that. I would not like to make a brag that I have had building down; but I have had a good deal where I have not had anything under, and I think there has been quite a little more of drone-comb than of worker-comb.

Mr. Baldridge: You would get a good deal of drone-comb.

Dr. Miller: I don't want any building down, because they would be likely to build crosswise.

Mr. Whitney's paper was then read by Mr. York, as follows:

Are Separators Essential to the Production of Straight-Comb Section Honey?

Something like three years ago substantially this question was put to a large number of recognized experts by the editor of the *The American Bee Journal*, and more than 90 per cent of the answers were yes; that cratable honey could not well be produced without separators. It has been my contention for a number of years that straight sections could be produced without separators, and I am gratified to learn that this contention is supported by so good authority as W. K. Morrison, a very close observer, and one having a bee-keeping experience thought to be unsurpassed by any other man in the United States, and a man who is regarded as an authority on any subject about which he speaks or writes. Also, I am pleased to refer to such names as Messrs. J. E. Hand, Rowland Sherburne and Leo E. Gately, all of whom are extensive and experienced honey-producers.

Assuming that straight comb honey can be produced in the surplus chamber without separators, how to do it presents itself for solution. My earlier experiences in bee-keeping were with the use of the standard $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ and 2-inch two bee-way sections without separators. There were more or less (often more) uneven or bulged sections. By experimenting (which I'm quite given to) by cutting down sections and fitting them into Langstroth sized frames, holding eight sections, and putting them into the brood-chamber to one side with brood-frame spacing, found them built down even like brood-comb. This led me to think that, if a narrower section with a full sheet of foundation was used, and a full force of bees, just as perfect sections could be produced in the surplus chamber without separators as with; hence the adoption of the seven-to-the-foot section, which has become the standard in my yard, and has been used with marked success for the last ten years.

The essentials to success are a section not thicker than seven-to-the-foot (the tall, thinner ones now in use are fully as good, if not better), a full sheet of foundation, a force of bees sufficient to fill the super, a temperature warm enough to permit comb-building simultaneously in all the sections. Right at this point as I look at it is the only objection of any value that can be given against the non-use of separators, and that is that, in our northern latitude, there are often chilly nights in June, at a time when bees are the busiest at comb-building, which causes them to retire from the outside sections to the center rows, when single-board hives are used, which sometimes results in having irregular sections. But sections injured by brace-comb when separators are used more than offset the damage done by uneven comb when not used. Later I will describe what I believe the ideal hive for comb-honey production.

I have experimented with plain wood, fence and tin separators; were I to use any I prefer the tin, though they cost more, to either of the others. They are practically everlasting, easily cleaned, while the others are frail, difficult to clean and mussy generally. Never yet have I produced a fence section of honey that I could not discover a corrugated appearance across the comb. Once I perforated several tin separators, punching four holes about four inches apart in the form of a square, and one in the center opposite of each section, and while these were only large enough for a bee to go through easily, there were little projections opposite of these places on each comb like the round heads of little bolts. The several experiments that I have been able to make convince me that the only perfect section of honey is that produced by the use of the plain separator, or none at all.

Separators retard the work of the bees, which is another serious objection to their use. Every facility should be given for access to the surplus chamber compatible with the ultimate results to be attained. Incidentally, this is an argument in favor of the T-super over that of the section-holder bottom.

In support of my contention, I wish to be permitted to quote extracts from correspondence of the gentlemen

whose names have been mentioned. In *Gleanings in Bee Culture*, Dec. 1, 1907, p. 1503, Mr. Hand says:

"We have had the pleasure of a short visit from W. K. Morrison of tropical fame, and of the many interesting subjects relating to bee-culture that were up for discussion before the convention of two, and the one that remained with us the longest after Mr. Morrison's departure, and is with us yet, is the non-use of separators in the production of comb honey."

After referring to other matters, Mr. Hand says:

"Mr. Morrison also assured us that he was able to produce sections of honey, with perfectly straight and even comb, without the use of separators, by using full sheets of foundation in the sections." Again he says: "About this time there seemed to be a demand for a light-weight section to sell by the piece, and this resulted in the introduction of the seven-to-the-foot section, as it is called, and the same becoming quite popular. It was claimed that honey could be produced in these without the use of separators; * * * some went further and used a section still thinner, and, it was a notorious fact, every decrease in the thickness of the section, the necessity for the use of separators was correspondingly lessened."

After referring to the difference in the size of the sections, comparing the tall with the square, without disputing the claim made by many that the former is the better seller, he says: "The argument that appeals the stronger to the producer of honey in favor of the thin section of the greater comb surface, is the fact, as stated by Mr. Morrison, that, if they are thin enough, no separators will be required to produce combs perfectly straight and even."

I most emphatically endorse Mr. Hand in what he says, as follows: "I consider this the best argument in favor of the thin section that has yet appeared."

I quote further from Mr. Hand, for I do not know how better to present the case under consideration. He says:

"The question that arises at this time is, are separators a hindrance to the bees? Separators are an expensive luxury in more ways than one. In the first place, they cost money, and not only take up valuable room

in the super, and valuable time in handling them, but they are a positive hindrance to the rapid building of comb, by breaking the cluster up into thin slices, for it is a noticeable fact that bees will build comb more readily when they can cluster in a compact body, and the larger the cluster the faster will the comb grow. It is claimed for the fence separator, a better filling of the sections as a result of a free passage for the bees through the fences between the slots, and, also, that the woven-wire separator affords a still better means of passage for the bees, and, therefore, sections of honey built between these separators will be still better filled than will those that are built between the fences. Admitting that this is true, which we cannot deny, yet does not this have a tendency to prove that, without any separators at all, the sections would be better filled? Even admitting, for the sake of the argument, that just as many pounds of honey can be produced with separators as without, then, if straight and even comb can be secured without them, what excuse have we to offer for their use?"

August 1, 1908, on page 947, *Gleanings*, Mr. Sherburne says:

"The reading of Mr. Hand's article in December 1st issue, page 1503, on the size and shape of sections, prompts me to give something of my experiences. I have produced tons of comb honey without separators, in fact, I have never used them. It is to be hoped that some one will find a better plan than any we now have; but if I had to use separators to produce good comb honey, I would give it up and run for extracted entirely. I make it a rule not to put on a super of sections until the colony is strong enough to fill all or a greater part of it with bees at once. They will soon be working in all the sections, and these will grow naturally and evenly. This is the secret of success in using sections without separators."

November 15, 1908, on page 1372, *Gleanings*, Mr. Gately says:

"During a season of our prolonged flows, the bees, if rightly managed, will store as much honey as can be secured in the average locality; but seldom is the flow sufficiently heavy for bees to work in supers as they will in a good basswood region. Dur-

ing such slow flows the bees are inclined to crowd honey into the brood-chamber, rather than into the surplus arrangement. As separators accentuate this inclination, I have been for some time endeavoring to eliminate these from our supers, and I have met with a measure of success."

In this connection, Mr. Sherburne, page 947, August 1st, presents an article at once interesting and instructive. Like him, we have learned that the secret of getting cratable honey when no separators are used, lies in having most of the sections started upon simultaneously. Comb-honey supers as now constructed, while being the source of frequent complaints, generally allow greater convenience for the man than for the bees. In localities similar to ours, many who started in to produce section honey have gone back to producing bulk comb honey for no other reason. I cannot but realize the great disadvantage bees labor under in ordinary supers; and another year, notwithstanding preconceived ideas as to how section honey ought to be produced, no separators will be used in our apiary. That more honey can be secured if we dispense with separators, has been demonstrated over and over. When bees do not enter the sections readily, but crowd the brood-nest with honey, the working condition of the colony is rapidly impaired. For a colony to remain populous is impossible under such circumstances. The last season some 2,000 1 $\frac{3}{4}$ Danzenbaker sections, having beeways, were used in our apiary, without separators, and never before did I see so clearly demonstrated the necessity of having supers so arranged as to meet the natural requirements of the bees."

And again, I wish to repeat, that this is a very strong argument in favor of the T super in the production of comb honey, over that of the section-holder bottom, but this is still better without separators, as equally as good results can be obtained if properly manipulated.

In conclusion, recurring to the matter of what may be considered the best arrangement for the production of comb honey without separators, I think it safe to say that that known as the Chaff hive, being double walled to the top of the brood-chamber, with outside case high enough to inclose space sufficient to contain two or

three supers under the cover (mine contains three), with an air-space of 1 $\frac{1}{2}$ to 2 inches around the supers in which the bees may cluster, is an ideal arrangement for the production of comb honey without separators, in a climate where the temperature is liable to sudden change. It is a common thing for the bees to cover the sides of a set of supers in these hives an inch thick. No fluctuation of temperature during the busy season disturbs the work in the supers in the least degree.

The advantage of this arrangement was well illustrated a few years ago, during an unfavorable season for surplus honey. My bees secured quite a crop of honey, while my neighbors, with more colonies, secured little or none at all. Possibly a cushion over the top of supers in single-board hives might be an advantage. But, I repeat, that a hive with an air-space around supers, as described above, with sections thin enough, so that the foundation shall be spaced as the bees, left to their own devices, naturally space comb from center to center, we have reached the Ultima Thule in the matter of arrangement for the production of comb honey without separators.

WM. M. WHITNEY.

A Member: I can crate honey produced without separators; but it is not all straight as it would be with separators, and if we must have chaff hives and air-spaces and all that sort of thing, I don't want to try it again. In my opinion, to produce comb honey as the market now requires, with the average bee-keeper, it is impractical.

Mr. Wheeler: In place of a double side to the hive, I struck on a plan that works nicely for comb honey. I got my section-holder made for a seven-to-the-foot section. Afterwards I went to work to change the size of my section from 1 $\frac{3}{4}$, and used the same section-holders, and I filled up the space on each side of the hive—the extra space that was left, I put in a different separator, another separator, so I left a big space on each side of the separator, so that the bees could have the privilege of going up on the side of the hive. Those double separators take the space of one section, so I eliminated that inside section that is always unfinished, and I find that the bees will go to work and finish it on the outside of the super

at the same time that they do the center. I take out one row of sections and fill it out with a dummy, something like Dr. Miller's bottom rack, to allow the bees to have free access up and down and out of the hive, and it seemed to work finely. My sections on the outside are finished up better than they used to be.

Mr. Whitney: Do you use separators at all?

Mr. Wheeler: Just the same, I use separators.

Dr. Miller: I would like to ask Mr. Whitney if he thinks that without separators seven-to-the-foot, which would be not far from $1\frac{3}{4}$ inches from center to center, if he thinks that would be as well as to have $1\frac{3}{4}$ from center to center.

Mr. Whitney: I have had but little experience with those thinner sections, but what I have had leads me to think that they would be better than the seven-to-the-foot, although I had quite a large stock of seven-to-the-foot sections on hand, and used them. I think if I were to buy now, I would buy the thinner sections, to run without separators.

Dr. Miller: Another point that Mr. Whitney brought up, it might be worth while for us to ask a question about. He said he was not able to use fences without having something objectionable, a washboard appearance; something like that. Is that correct?

Mr. Whitney: That is right.

Dr. Miller: I would like to know if that is the general experience. How many have been able to use fences without any such objectionable appearance?

Mr. Macklin: I have used tin separators to some extent, and I never found any corrugations on the comb honey.

Dr. Miller: Why?

Mr. Macklin: Too much work. I prefer tin separators. I use a tin separator; it lasts forever, and costs very little more than the sawed separator. I buy 110 sheets in a box, and it costs about eight and a half cents a sheet; a cent a separator. A sheet cuts into eight separators, and there are strips left that I use to hold the section-holders. I much prefer the tin.

Mr. Whitney: I simply wanted to say in reference to the tin, I would

prefer the tin to either of the others, as I stated, because they are so much easier to clean, and they are everlasting, and if I was going to recommend a beginner commencing honey production, perhaps I would recommend the use of separators. Dr. Miller said he didn't think the average bee-keeper could produce good honey without separators. The average bee-keeper, take the country over, cannot produce good honey anyway. He is not careful enough. He is careless and slipshod. But I think the careful bee-keeper who attends right to his business—of course, he don't want to be fooling around with a good many other things—can produce the nicest kind of section honey without separators. I have produced considerable honey; I have a small apiary, and I have seldom sold a case of honey for less than \$4.00.

Dr. Miller: Mr. President, will you be kind enough to go on with that motion, and ask how many there are who have used fences and found no objection in the appearance of the sections, and how many have used them and found the appearance of the sections objectionable on account of them.

Mr. Kimmey: I rise to ask Dr. Miller this question, in regard to the corrugated appearance of the sections. I may say that during the few years I have kept bees, I have used the fences from the start, simply because I read some bee-papers where that was recommended. I got the Root ten-frame super, seven section-holders, and I have never noticed any corrugations such as have been spoken of, and I have produced as fine honey as I ever saw anywhere. I think I like mine better than this. You know the kind I am speaking of; there is nothing to cover the section on top. The three sides are covered, one by the section-holder at the bottom, and the ends of the section-holder, at the outside end of each row, and the other sections come right together, just the simple, plain sections. That leaves the top of the sections uncovered, so that you have to clean the top of the sections; that is the main objection. But the other parts of the section are superior, because there are two edges of the section that are uncovered, and in my section there is only one, and they fit closer than those do, and I think there is less propolis along the under side

than there is with these. When you ask the question, "Are you perfectly safe?" I would say, "No, of course not," because there is nothing that goes exactly right; but yet I think that they are tolerably good in a good honey-flow. In a very poor honey-flow, they are good for nothing.

President York: The question Dr. Miller wanted to ask was, how many had used the fence separators and found corrugations on the honey-comb.

Dr. Miller: There are two classes, one has used the fences and found the surface objectionable, and some have not.

President York: How many have used the fence separators and found them objectionable on account of the corrugations on the comb? Four.

President York: How many have used them and not found them objectionable? Thirteen.

Mr. Taylor: May be some don't count the corrugations objectionable.

Mr. Kimmey: I would like to ask Dr. Miller if the corrugations are of such magnitude that you couldn't help but notice them. May be some of them have not looked closely enough.

Mr. Macklin: With regard to the use of separators, I bought 683 pounds of honey from one bee-keeper who put up his honey without separators. I bought it subject to crating, what I could crate I would pay for, and what I couldn't crate I would send back. 341 pounds went back as being uncratable.

Mr. Taylor: How many went?

Mr. Macklin: The difference between 341 and 683.

Paste for Labeling on Tin.

"What is the best paste to stick labels to friction-top tin pails? How is it made?"

Mr. Dadant: Simply make flour paste. Take water, let it get hot on the stove, put flour in it and keep stirring it on the stove until you have the paste thick enough, and you will never have any trouble. Not starch, but flour, common flour.

Dr. Miller: Rye or wheat flour?

Mr. Dadant: We use wheat flour. Perhaps if we had rye, we would try the rye.

Mr. Taylor: I suppose a good many fasten the slats in the bottom of cases with that. How are slats fastened in

the bottom of shipping cases? How many fasten them in with paste?

Pres. York: Raise the hands. None.

Mr. Taylor: How many nail the slats to the bottom of the shipping cases? (Four.) I would put them in with paste. It is very much easier and very much more effective—such paste as Mr. Dadant has described.

Mr. Dadant: In order that the paste will not mold if you keep it for a while without using it, and in order that the mice won't gnaw it off the faces of the tin cans, we use a little alum liquefied in the water when you make the paste, and it will keep the paste fresh much longer. We have kept it three or four weeks, until it became so dry we couldn't use it.

Pres. York: How do you apply it?

Mr. Taylor: Just put the alum in the water and melt it.

Pres. York: How much alum to a gallon of paste?

Mr. Taylor: O, excuse me!

Dr. Miller: A little carbolic acid is just as good.

Honey Souring in Summer Heat.

"Will extracted honey sour in summer heat, about 95 degrees?"

Mr. Macklin: It depends upon the honey.

Mr. Baxter: It depends upon where it is kept.

Orange Honey.

"Do bees gather honey in such quantities from orange blossoms as to warrant a bottler in labeling his honey "Pure Orange Honey"?"

Mr. Whitney: I have a bottle of honey that I bought at a grocer's labeled "Orange Blossom Brand" honey, and it is beginning now to granulate a little. What that means I don't know. Whether it is proper to be considered now under the question, I don't know.

Mr. Taylor: It means the name of the brand and the quality of the honey.

Mr. Whitney: I was wondering whether under the Pure Food Law that was a proper brand for honey. It is put out as "Orange Honey."

Dr. Miller: I suspect the pith of that question is to find out whether bees gather enough from orange blossoms to warrant any one in saying he has orange honey. Years ago that label

was used, and I think I am not wrong in saying that the statement was made that there never was such a thing as having enough gathered from orange trees to warrant any such label. Latterly, however, some have said that they do have. I think there have been some statements made that ought to be accepted as truth, that in some cases at least orange honey may be on the market.

Mr. Fluegge: In case there was enough orange blossom honey to bring it on the the market in bottles, could it be readily distinguished from sage honey or other California honey? I think we ought to refer that question to some bee-keepers from the Pacific Coast.

Pres. York: It can very easily be distinguished.

Dr. Miller: Have you tasted honey that you believed was orange honey?

Pres. York: Yes, I had a gallon keg of it at one time.

Mr. Fluegge: Have you tasted the honey in the market today labeled "Orange Honey"? The so-called orange honey you tasted this morning was sage honey.

Dr. Miller: Was the orange honey you tasted anything like that made from sage?

Pres. York: No. It came from California and it tasted like the blossoms smell, so I am satisfied that it was orange honey.

Mr. Fluegge: In case that was honey put out under false labels, would the "National" do anything to take up the matter; would they be interested in that?

Pres. York: You had better refer that to Mr. France. I cannot answer it.

Mr. Fluegge: If there were a party labeling sage honey or other amber honey "Orange Honey," would the proper thing be to refer it to the "National?"

Dr. Bohrer: The proper thing would be to refer it to an analytical chemist in connection with the Pure Food Law—to the pure food officers.

Mr. Fluegge: Would the pure-food people know orange honey from any other honey?

Dr. Bohrer: They will find it to be pure honey, but it isn't orange blossom honey.

Mr. Wheeler: I believe the label is

used to deceive people. It does deceive them, but whether it is done for that purpose or not, I don't know. I find that brand in the market, and people tell me they can taste the orange in it. I am just like you, I think it must be pure sage honey. In California you can go anywhere in the streets and taste the same thing that is sold all over Chicago as "Orange Blossom Honey." People think because the name is on there that that is the case.

Mr. Fluegge: If I bring you a sample of this honey, will you pass your opinion on it?

President York: I will, because I am anxious to taste all honeys. I would like to say in answer to this question that orange honey is produced in rather small quantities in Florida and California, but certainly not in large enough quantities to warrant putting it on the market as such. This is simply a brand, the same as the "Hazel" brand, sold extensively by Siegel, Cooper & Company, and others.

Mr. Wheeler: While we are getting this label business settled, I will say that a year or so ago the pure-food commissioners told us that we should not put "Clover Honey" on it unless we were sure that it was clover honey, or we should not put on "Basswood Honey" unless it was basswood honey. Would these people have the right to label it "Orange Honey" if it was not from orange blossoms?

President York: I think they could be prosecuted under the Pure Food Law.

Mr. Wheeler: If they labeled it "Orange Brand?"

Dr. Miller: I am pretty sure that "Orange Brand Blossom" could be prosecuted if it deceives.

Dr. Bohrer: I think Dr. Miller is right. The Secretary of the State Board of Health in our State came to our State Fair, and he went to all those men selling different things on the play ground, and he said that there must not be anything bogus—there must be no deception about it. Now, "Orange Blossom Brand"—what is that name for unless to deceive people? It was not intended for anything else, and any deception makes any one liable to prosecution in our State.

Mr. Whitney: That honey is put up by a large wholesale house in this

city, and sent out to the grocers all over the country, "Orange Blossom Brand."

Dr. Bohrer: Have you a State Pure Food Law here?

President York: I think we could easily find out about that by submitting it to the Department of Agriculture and getting their opinion on it.

The Convention then adjourned to 7:30 p. m.

THIRD SESSION.

The Convention met pursuant to adjournment, with President York in the chair.

Prospects for Clover Honey in 1909.

"What is the prospect for a crop of white clover throughout the drought belt next season?"

Mr. Smith: I can say that through central Illinois the prospect is not very flattering. The clover is burnt out. You cannot see any trace of white clover at present. We have had no rain since the first of July, to amount to anything.

Mr. Whitney: I asked that question because in some places up in Wisconsin, where there is a gravel subsoil, it seems as though the white clover was cleared out largely. I was down east in New York State during the fall, and they have had a greater drought there than we have had, and in Ohio also, and excepting on clay soil they complained a good deal the same way; so it occurred to me that anybody who had a nice crop of honey in the drought-belt might not miss it if he held it over, although we are advised to dispose of it if we can get a reasonable amount for it; but I am afraid the season next year for white clover honey will be a rather poor one.

Dr. Miller: I cannot tell you about a very large scope of territory, but within a week I went out to see what the prospect was on my own place. I went into one field that had not been closely pastured down, and there had been a bit of late rain, and there was an abundance of clover; young, to be sure; it had grown late. The prospect on that piece is just as good, I think, as it was this year—one of the best years I ever knew for the growth of white clover. I went into another

field which had been pastured very severely, and I couldn't see a leaf of clover; and then I put on my specs and got on my hand and knees, and could see a small leaf here and there; but I don't think there will be very much of a growth of clover there. I think it depends very largely upon how closely a field was pastured down as to whether there will be any clover there or not.

Mr. Wilcox: But what I want to find out is, would a severe drought at this season of the year, through October, for instance, be detrimental to the honey crop the succeeding season? Is it necessary that the fall rains should give the clover a start before winter sets in? That is the point I wish to get at. Our honey crop will depend somewhat upon the winter snows and spring rains. We must have clover.

Mr. Kluck: In the northern part of Illinois, where I live, the old pasture fields have no white clover. It is all burnt out—cannot find any. Fields that have hardly been pastured have some white clover. The prospects are for no clover next year.

Queen-Excluders and Extracted Honey.

"In the production of extracted honey, is it practicable to compel the storing of the chief part of the surplus in supers without obliging the bees to pass through queen-excluders? And if so, by what means, and what advantages will result to the apiarist by securing this?"

A Member: My greatest trouble is that they will store too much in the supers and not enough in the brood-chambers. The result is that they have no honey for winter stores, unless I feed them after the season is over. To do that, I have to take out the empty combs and put the full ones in. If the bees will, without any attention on the part of the bee-keeper, store enough below to carry them through the winter, there is no trouble but that they will store enough above—all they can spare.

Mr. Kluck: If I put on the queen-excluder, my colonies will swarm the same as though I was producing comb honey. The queen has not room, and they will swarm.

Mr. Holbrook: What size hive do you use?

Mr. Kluck: 10-frame Langstroth, and when I have no excluder I am not troubled with swarming very much.

Dr. Bohrer: Are you bothered much with the queen going above?

Mr. Kluck: She will go in the first super. Some times I have 5 or 6 supers on at one time.

Dr. Miller: I am a little curious to know what Mr. Wilcox can tell us on that—by what means, and what advantages will result to the apiarist by securing this result?

Mr. Wilcox: The question is by what means is it practical to induce them to store the honey in the supers? My opinion is that it is impracticable to do it; that they will do it anyway.

Dr. Miller: Without passing through the excluders?

Mr. Wilcox: Yes, without passing through excluders. You get too much honey above, anyway.

Dr. Miller: Possibly I misunderstood the question. I got the idea that the writer of the question wanted to know, when he had excluders on, how he would get the bees to store the honey above without going through the excluders.

Mr. Wilcox: How to get the honey above without the use of the excluders.

Mr. Smith: There would be an advantage to the apiarist not to have room in the second super or the combs filled with bee-bread. The bees will not store bee-bread where the queen cannot go; there I think it is quite an advantage to have excluders.

Mr. Whitney: If the excluder is on, and there is an upper entrance for the worker-bees to go in and out, they might be induced to store their honey there without disadvantage to them, because they would not have to go through the excluder. Some times that is done. Perhaps the entrance should be on the opposite side from the entrance in the main hive below.

Mr. Wheeler: I don't see any need of an excluder with shallow frames. I don't think there is any trouble in bees going into the super if you use a four or five inch frame.

Dr. Miller: Do you mean shallow frames above or below?

Mr. Wheeler: Above. After that is full, put in another one. Bees don't

attempt to put brood in a shallow frame, with me. If I put a Langstroth frame above another Langstroth frame, they are almost certain to put brood up there. With the old style excluders, in nine cases out of ten, the queen will go through the excluder.

Mr. Horstmann: I don't see any use in an excluder except late in the season. I put my excluders on about the first part of September or the latter part of August. I give the queen all the room she wants. I breed sometimes in three hive-bodies at one time. When the honey season is almost over I fill up the lower hive-body, and as fast as the young bees hatch out, the bees will fill the empty cells with honey, and I am never bothered with bee-bread up there. I think it is a great advantage around here not to use the excluders until the honey season is almost over. I consider that the bees have just as much trouble getting into a small space as I would have in trying to crawl through a fence with a mail sack on my back. If the bees come in loaded, the queen-excluder is a disadvantage to them, and by doing away with that excluder during the main flow it is a great advantage to the bee-keeper, and also to the bees.

Mr. Moore: There may be some here in my own fix, who would like to know how extensive honey producers find this, whether it pays to put excluders in all cases between the brood-nest and the super, or whether the damage to the super honey is so small that it does not pay for the honey.

Dr. Miller: Are you talking about comb or extracted honey?

Mr. Moore: Comb, exclusively.

Dr. Miller: In working for comb honey, I can answer that by telling my own practice. I don't use excluders at all with comb honey, because there are so few cases in which I find any brood from the queen getting above that it doesn't pay to have the expense or even the trouble of the excluders; but in order to be successful without the excluder it is important that you have every section filled with worker foundation. If you have merely starters in the sections, the queen will be almost sure to go up, because the bees not having enough drone-comb below to suit their notions will build drone-comb above, and you can count on the queen going up and laying in your sections.

Mr. Moore: Dr. Miller, can you add, if you know, what is the practice of our largest comb-honey producers in this matter?

Dr. Miller: I think there are very few comb-honey producers who use excluders. Indeed, some of our larger producers of extracted honey do not use excluders. They, however—for instance, E. D. Townsend—depend upon getting the bees started to storing over the brood-chamber, and then, when they add room for extracting combs, they add it above. There are some at least who depend upon what Mr. Wheeler spoke of, shallow extracting combs. I think Mr. Dadant says the queen will not go up and lay in shallow extracting combs as she would in the deeper combs.

Mr. Taylor: I should like to ask whether some seasons you don't get considerable brood in sections?

Dr. Miller: Yes, and no. I think there is a difference in seasons, and I don't know what the difference is. Sometimes I have had a super in which there would be a very large proportion of the sections that would have brood in them. I don't know, but take it all together, take one season with another, I think the worst season I ever had, I don't believe I ever had enough brood in sections to make it pay to use excluders.

Mr. Taylor: I think not. Still, I think there are some things that rather draw the queen up. For instance, if you have a good colony upon foundation or starters, and you remove sections from the hive from which they came, sections that are only partly worked out, the queen is pretty sure to go into them.

Dr. Miller: That is, would swarm. But if you have comb, to hive them upon comb, they are not apt to do that, or if you have a case of sections nearly finished and put that immediately above the brood-frames, she isn't likely to go up.

Mr. Wheeler: It looks, from what these men say, as if a man that handles comb honey should not use queen excluders. I use queen excluders on my comb honey, but I use a different hive. I use the Heddon hive. After the bees get nicely started in two of the Heddon hives, I put the comb super above and slip the lower story away, and I have the brood chamber 6 inches deep, (about $5\frac{1}{4}$), and above the queen-

excluder all the comb honey goes. Nine times out of ten the whole of the white clover honey comes into the comb honey super. Whenever that is filled I put another above. I never have any brood in the super, and very seldom in arranging that way do I have any pollen. At first I had trouble with pollen in the super because I didn't put my second brood-chamber underneath. But by leaving the two brood-chambers on for two or three days, the bees commence putting pollen into the combs they have already built, and none of it gets into the super. I use the queen-excluder entirely for hiving new swarms on the Heddon hive.

Dr. Miller: Mr. Wheeler and Mr. Taylor have together mentioned one thing, and I might perhaps be pardoned to go on with what Mr. Taylor said, and say that the rule is in hiving a swarm not to put the supers on until the bees have got a start below, until the queen has established her work below.

Mr. Taylor: That is not what I say.

Dr. Miller: What do you say?

Mr. Taylor: I say put them right on.

Dr. Miller: Without any excluder?

Mr. Taylor: Yes.

Dr. Miller: What if the queen goes up?

Mr. Taylor: If she does? She doesn't.

Dr. Miller: I understood you to say that if you put on sections that they had just started on—

Mr. Taylor: I said if you do that, but I didn't say I did it. No; I don't use excluders. I use comb generally. For instance, if I were obliged to use a hive with only starters in or foundation, and didn't have a case of sections nearly finished to go on to act as a queen-excluder, I should be obliged to put on an excluder for a time.

Dr. Miller: Or wait. Suppose you didn't have an excluder.

Mr. Taylor: I don't wait. I have as many bees as I want, and I don't hive swarms now very often on either starters or on foundation. If I have a comb I use the comb. Then I manage my swarms in some other way after they are exhausted.

Dr. Miller: The President asked as to the point Mr. Wheeler made—the depth of the frame. The kind of hive has no little to do with it. Unques-

tionably, he is right about that. But as to pollen in the sections, I have some suspicion that with shallow frames I would have pollen in the sections, even if I used excluders. What makes me think that is, that when using shallow frames in the brood-chamber I used them without excluders, but I had a very unpleasant proportion of pollen in my sections, and yet without brood, and I can hardly see what difference the excluder would make in that case, because the queen didn't go up, but the bees took pollen there.

Mr. Wheeler: I have figured that out in my own mind. The bees go to work in the two stories in the Heddon hive as deep as the Langstroth hive, and begin storing the pollen where they are going to have their brood-nest, and after that brood-nest is established and their plans made, they don't lug any pollen outside of that. Out of, maybe, three hundred supers that I had of comb honey, I had but one of pollen.

Dr. Miller: May I ask, Mr. Wheeler, why mine did—because they did?

Mr. Wheeler: Did you put your super on at first when you hived your swarm?

Dr. Miller: No, sir. The super was put on afterwards, after the brood-nest was established.

Mr. Wheeler: It must have been a matter of location! I have been troubled with pollen occasionally, but thought I had the matter overcome by my present arrangement.

Mr. Taylor: I think with Mr. Wheeler's practice it is necessary to use excluders. For some years I practiced his method. But hiving in one section of the Heddon hive, of course, for the same reason that Mr. Wheeler does, I used two sections for two or three days, and then took one away, but still there would be more or less pollen taken into the upper story when the lower section was taken away. It is a rather small amount of room for a queen, and a good queen will fill one section of the Heddon hive entirely full of brood, so there are but a few ounces of honey in it, and not much room for pollen, so that often the bees are compelled to take their pollen above. I don't practice that method any longer.

Dr. Miller: May I ask right here if Mr. Taylor thinks the use of an ex-

cluder would prevent the pollen from getting above?

Mr. Taylor: I don't think it would. In my practice, it **doesn't**. It may have a tendency that way—not so much taken up. But still I find pollen to some extent in objectionable quantities with the excluder. Now I don't practice that method any longer. I use the two sections of the Heddon hive.

Best Hive for Beginners.

"What is the best hive for beginners in apiculture?"

Mr. Whitney: That question was answered a year or two ago by Dr. Miller. It was asked, and he said, "Yes."

Mr. Wilcox: I should say the same hive that our forefathers left off with. In other words, the best hive invented up to the present.

Dr. Bohrer: I live in a State where bee-keeping is practiced on a very small scale. When I first went there, twenty-five years ago, I was President of the State Bee-Keepers' Association, and held that position a great many years, and a great many letters were written to me asking, "What hive shall I begin with?" I wrote a number of private letters, and said that my judgment might not give satisfaction, as some man might come along who was a friend of some other hive, and would condemn what I suggested. I finally answered it on two different occasions, through the "Kansas Farmer." I have written for the Bee-Keepers' Department of the "Kansas Farmer" for a number of years. I said this, that in the records upon the subject you will find that more of our extensive bee-keepers are using the Standard Langstroth hive more than any other, and perhaps more than all others combined, and that a new bee-keeper would make no mistake to commence with the Langstroth hive. But I said then, and say it now, that I don't want to discourage any man in the matter of experimenting with or improving our bee-hives, because it is too early yet to say that we have reached perfection in that direction. I know there have been some improvements made in the Langstroth hive in the last fifty years; some very valuable improvements. But for the average beginner, he will make no mistake if he uses the Langstroth hive. Mr. Bingham would

not use anything but the Bingham hive, with very shallow frames. Mr. Heddon would not use anything but a Heddon hive. But they are experts. But the average bee-keeper that doesn't look into his bee-hives half a dozen times in a year, would better commence with a larger hive than the eight-frame. I have advised them to use the ten-frame Langstroth, for the beginner. Mr. Dadant won't use anything but something similar to the "Jumbo" hive, and it is a good hive if a man wants to winter bees out-of-doors. But I would not advise a beginner to commence with that, because if he ever wants to sell his apiary he would have a lot of difficulty in selling that hive, because they are not in general use. There are more Standard Langstroth hives than all others combined. That is not saying anything against the man who wishes to use the divisible brood-chamber hive, the Heddon hive, or the Jumbo hive. I couldn't use, and would not be satisfied with it; but if it would suit you, use it. But for the beginner who knows comparatively nothing about bees, and the man that doesn't handle his bees very much, and just wants a few colonies in his orchard, he cannot get anything better than that if he wants to handle his bees at all. If he doesn't, he would better keep no bees at all, as that is a cause of foul brood being scattered over the country. We will have a fight to get a foul brood law, but we will get it. We are going to have trouble in this State. One man of some influence in the State Senate thinks what we want is to pass a law paying some one to go into our hives and pick dead bees out of them. That was the sum total of his logic in the matter. That was my reason for asking that question, because I know there are a great many persons beginning, who don't know what to begin with. We will make no mistake, and won't tell them any story, when we say that there are more Langstroth hives in use by the successful bee-keepers than all others combined.

Dr. Miller: There is just one objection to taking the advice that the Langstroth is the one for a beginner to commence with; if it is true that for some, as I understood Dr. Bohrer to say, it is better to have a hive of some other kind, a shallow hive. If that is better for him, it might be better for that person to have begun with that.

If he starts up with a whole lot of Langstroth hives he cannot so easily change to the other. My advice to a beginner would be to begin with a movable-frame hive.

Dr. Bohrer: And one of the best.

Mr. Kluck: I heartily agree with what Dr. Bohrer has said with regard to the hive. I would never advise a young man to keep bees in anything smaller than a ten-frame Langstroth hive. An eight-frame he will have to watch. They will easily starve to death, as there are too many bees for the honey. If a wet, cold time comes in the spring, you will find they are starved to death. I have told the bee-keepers in northern Wisconsin and southern Illinois that I wished I had never been to that convention when they voted that the eight-frame hive was the best hive for the bee-keeper to have, and the hive you could make the most money out of. You could do it with the first swarm, but after that you are out.

Dr. Bohrer: If you understood me to say I recommended the eight-frame, you are wrong. I didn't recommend it; I always recommend the ten-frame hive.

Mr. Kluck: I always tell the beginner to get a ten-frame hive; but if they can look through and tell about the bees later, they can get an eight-frame hive.

Mr. Taylor: If a young man is going to keep bees, he wants to learn the business, and an eight-frame is just as good or better to learn on than the ten-frame. One thing he wants to learn is that bees must be looked after. It won't do to set down your hive and take what honey you can get, and let the bees starve to death if they have a mind to. You must see if they have stores. There is an advantage in eight-frame hives, and that is, you get the honey in the sections. Of course, you see the advantage of that. You get your honey where you can sell it and get a good price, and it is a money-making business to put in sugar stores for the wintering of the bees, and a man beginning to keep bees ought to know that, and he cannot learn it any better than by keeping his bees in a hive that is a little too small some times for the storing of sufficient honey for wintering purposes.

Dr. Bohrer: Mr. Taylor, do you

think you can get more section honey off an eight-frame hive than off a ten-frame?

Mr. Taylor: If your colony is just as good, you can. Your colony is just as good if your stores are as good. If you have a queen that can fill a ten-frame bee-hive—if you come to count up the number of bees that are produced in an eight-frame hive, you can see your queen doesn't fill it.

Dr. Bohrer: I have had them fill an eighteen-frame hive.

Mr. Taylor: You get a queen that will fill five Langstroth hives full of bees, and if the strain is good for anything, you have a good, strong colony all summer. I don't want a great overgrown colony of bees. I always have trouble with swarms if they are overly large. When you have them in a hive where they are uncomfortable and uneasy, they don't work as well as a moderate colony of a good strain.

Mr. Moore: So far, I have gathered from this discussion that when I am a beginner, when I am green at the business, I shall start with a Langstroth ten-frame hive; but the inference so far is, that when I get expert in the business, I will have to take a "Danzenbaker" or something else. I don't think you ought to say what is good for a beginner, but for a bee-expert, or what is good for a man who is going to play at it, as I would not say what is good for a beginner, as a man who begins ought to begin the way he is going to stick to it. I go up against the great man from Michigan with fear and trembling, but I am diametrically opposed to Mr. Taylor's views on this ten-frame question. You must think of this, there are very few Taylors in the bee-business. Mr. Taylor is like Mr. Heddon—he would make a success of anything he undertook to do. He puts his whole energy and enthusiasm into it. But you take the average bee-keepers up here in the North, we are going to succeed with a ten-frame hive where we will fail with an eight. It means that the bees are going to have one-fourth more strength, one-fourth more honey, which is important where we have long, tiresome springs with no honey for the bees; or six or seven months of winter when bees gather nothing and still consume. I stick to it that for nearly everybody, except these very expert people who put their whole time and soul into the

bee-business—it doesn't matter whether they have a four-frame or a fourteen-frame hive—but for the ordinary people that keep bees, the ten-frame Langstroth hive is the thing. The bees will do better for themselves, with less brains on the part of the bee-keeper, than with any other hive, in the North.

Mr. Taylor: Mr. Moore says with a ten-frame hive the colony will be one-fourth stronger. Well, now, if they are one-fourth stronger, they will use the same proportion of the comb for brood, and how will you get any greater proportion of honey in that hive for the wintering of the bees than you will in an eight-frame hive?

Mr. Moore: I don't know that I understand the question clearly.

Mr. Taylor: According to your argument, you will have the same proportion of comb occupied by brood in a ten-frame hive as in an eight-frame hive, and your colony is that much stronger. Of course, there is just the same proportion of room left in the ten-frame hive as in the eight-frame hive for stores. The bees are as liable to starve to death as they are in the eight-frame hive—must be something wrong with the argument.

Mr. Moore: I have had eight or ten years' experience with the ten-frame hive, and I have observed the success of my neighbors with their bees. I have noticed this: I have imported foreign blood frequently, have bought quite a number of queens, and have kept an average of young queens in my hives; and my ten-frame hives were bang-up full of bees—they could fill three ten-frame hives if you were running for extracted honey. I don't believe it is possible to get any such results from an eight-frame hive to start with in the spring, with our Northern climate, with the long, cold springs.

Mr. Taylor: I just want to make the remark that you will notice I have not said anything against the ten-frame hive. I am simply speaking to the argument that has been made in favor of it.

Dr. Miller: There is one phase of the question I was thinking of when Mr. Moore was saying that a man ought to be advised to take the hive he is going to continue to use, but there is one phase of the question that makes it possible to vary from it.

If you were to say to me, which is better for a beginner, an eight-frame or a ten-frame hive? and give me nothing but that question, not allowed to put any conditions at all, I would say, without any question, the ten-frame hive, on this ground, that the average beginner is not going to be a very careful bee-keeper; he is not going to give the very closest attention to his bees, and if he is not, the ten-frame hive is decidedly safer for him than the eight-frame hive. You will see there is some reason for giving the advice to the beginner to begin with the ten-frame hive. I have had experience with the ten-frame hive and with the eight-frame hive. I am now using eight-frame hives, and if I were beginning again, it would be a question with me whether to use eight or ten-frame hives. One objection to the ten-frame hive is that it is too small. The eight-frame hive is practically larger, because you can take two stories of the eight-frame hive, whenever a queen is filling more than one story, whereas with a ten-frame hive you would have too much room to give the two stories.

Mr. Wilcox: I was going to ask, how long must a man continue with a ten-frame hive as a beginner before he can use an eight-frame hive? When does he cease to be a beginner? If a man intends to do large bee-keeping and be a successful bee-keeper, he should begin with the best hive that he has any knowledge of, or the one he believes to be the best; start with it, and continue with it, until he finds something better.

Mr. Horstmann: I believe Mr. Moore likes the ten-frame hives best because they look better in his estimation. A bee-keeper knows there is no difference in the hives. It does not make any difference whether you use an eight, a ten, or a twenty-seven frame hive. I say it doesn't make a bit of difference. I have used the eight and ten side by side for several years, and my eight-frame hives have come out ahead. That may be due to the eight-frame hive-bodies having a better queen. I have one eight-frame colony that I had on the scales, that gave me 227 pounds of honey, and my best ten-frame hive gave me 147 pounds. They had all the room they wanted, both the eight and ten. I story them up four or five stories high. In the spring I bring my bees out of

the repository, and I claim, with good protection, they can build up the colony that much faster. My eight-frame colonies will be as strong as the ten in the spring. There will be no reason for any difference. Why should there be? The queen has had all the room she wanted all summer; and there is no reason why the colony in the eight-frame hive-body should not be as strong as the ten.

Dr. Bohrer: The impression seems to be that I was advising the use of shallow hives, the Danzenbaker and other hives. I wish to remove that impression; it is not a correct one. I said I could not be induced to use them to any extent. One of the first shallow hives was invented by Dr. Bingham, of Michigan. He sent me one of those hives, and I used it one year, and if I had not put those bees in the cellar I would have lost them, because it was too shallow to winter in, and I think you will find the same difficulty in the Middle and Northern States. In the South you can winter your bees in shallow hives more easily than you can in the North. The reason I have recommended the Langstroth is because I regard it as safer for one who does not understand the business. One man may become an expert in less time than another. One man takes it up from the start. I had eighteen hives sent to me from different parts of the United States and Canada to test. Among them was a Quinby hive, and a Thomas' hive from Guelph, Canada, all deep-frame hives. I had a personal conversation with Mr. Quinby with regard to the reasons for making his hives two or three inches longer than Mr. Langstroth's. He said, "In New York, where I live, we have protracted cold weather, and the bees go into winter quarters in the lower part of the hive, and the more you can have the stores above them and to the rear of the hive, the safer they are." Where a beginner commences with a shallow hive, about a five-inch frame, he is running a risk that an expert would know how to get over. A beginner would not think about that. The expert would know he would have to put another hive-section up there or lose his bees. The Standard Langstroth will give better satisfaction almost over the civilized world, but in the Western hemisphere, at any rate, without any care from the bee-keeper, and Mr. Quinby gave me as

the reason the hive was made deeper and the frame longer, was because it took the bees longer to eat through a range of combs. The "Jumbo" is very near the Quinby frame, not quite so long, and may not be quite so deep—I forget dimensions. I have used all of them, the "Dadant" hive, the "Queen" hive—I had eighteen different hives at one time—and when I come to practical purposes, for the beginner, I recommend the Langstroth, and until I have reason to change my ideas from actual experience, I shall recommend it.

Mr. Whitney: I have listened to the arguments of the eight-frame advocates and the ten-frame advocates for the last number of years, and as a beginner, I come to the conclusion that I would add the two together and divide it by two, and take the nine-frame hive, which I use, and it is an admirable hive, all things considered. The eight-frame hive is considered by men like Mr. Doolittle as being the best hive for comb-honey production, because the bees do not store so much in the brood-chamber. For extracted honey, the ten-frame hive would be the better, it seems to me, for more storage-room. But after all the discussion of this subject, it resolves itself down to the answer that I think Dr. Miller gave two years ago, when the question was up. He said, "Yes."

Mr. Moore: According to Mr. Horstmann, there is no advantage in a ten-frame hive over an eight-frame. Mr. Horstmann would just as lief have eight dollars in the bank as ten dollars in the bank. There has been a long discussion for years on this subject. The eight-frame advocates have stated that if you had an enormous chamber like the ten-frame hive, there would so much below that there would not be so much above, and it has been a controversy between the eight and the ten-frame hive. Dr. Miller says he would not have anything but a sixteen-frame hive. Now, it resolves itself, in my mind, to this: One great big colony with all the push, and go, and spirit, there is in it, is worth half a dozen weak ones, and I think you will find that the eight-frame hive, with our long, discouraging season, will not have the push and go, because it seems that, in the spring, bees can actually weigh the honey they have. Suppose you don't interfere with the honey in the

brood-chamber from the year before, the ten-frame hive will have enough to take them through seven months and come out with enough honey to encourage them. Dr. Miller says the sixteen-frame hive is the same proposition, twice eight. It is the same as if you put them all on one story. The idea is to get enough with the push and go. You have got to figure on our cold winters and long springs, and the ordinary bee-keeper cannot do it; but with a ten or sixteen-frame hive the bees will attend to it, because they will have abundance of room and abundance of honey.

Dr. Miller: I think we have talked a good deal more than we know about this. The question is, what would this convention advise the beginner? One would advise a ten-frame Langstroth hive, another an eight-frame Langstroth hive, another would advise shallow hives, and another a hive larger than a ten-frame Langstroth. Will you kindly find out how many there are who would advise those different kinds?

President York: How many would advise a beginner to use the ten-frame Langstroth hive? (Four.) How many would advise the eight-frame Langstroth hive? (One.) How many would advise a shallow hive? (One.) How many would advise a hive larger than a ten-frame Langstroth? (One.)

Foul Brood Law in Illinois.

"Why have we no foul brood law in Illinois?"

Mr. Smith: It is not because the bee-keepers have not attempted to have one passed, that is, those who take an interest. For the last six sessions of the Legislature I have been on the floor of the Senate and House both, and did all I could, and at the last session it passed the Senate, and would have passed the House, but it was lost by one vote in the House, and I suppose there were some bee-keepers to blame for that, but I would not say so, and I hope that the next time we make an attempt it will be successful.

Mr. Kimmey: May I ask Mr. Smith what seems to be the trouble? What arguments are used to oppose the passage of such a law?

Mr. Smith: There are numerous things that come up. In the first place, the Legislature was averse to creat-

ing any new appointive office for the governor as a political factor, as they claim all appointive officers are political factors for the administration. Again, there were some parties in the committee that argued thus: "Well, supposing you go around and burn up those people's bees that have foul brood, what are you going to do with all those in the hollow trees? Won't they stay there? You cannot go out there and hunt those up, and the bees that have been cured will be attracted there and the disease will be carried to them."

Mr. Moore: Will you tell us why it would necessarily be an appointive office when it is not now with the present law? Why would it be a governor's appointment when it is not now?

Dr. Bohrer: Are you appointed by the State Association?

Mr. Smith: Our Act called for the appointment by the governor.

President York: The Act that failed to pass.

Mr. Smith: Yes. Now, we propose to change it, so that upon the recommendation of the Illinois State Bee-Keepers' Association, the governor shall appoint. Well, the governor might appoint, would probably appoint, some political friend. He might not appoint a man that was competent, or that he knew was competent for that purpose. That was the objection they had.

Dr. Bohrer: Was your law formulated so as to call for a State bee-inspector that should be a competent person, recommended by competent bee-keepers?

Mr. Smith: It was supposed that the State organization of bee-keepers would not recommend a man who was not competent. If the bee-keepers have it in their hands, they will select a man who is competent.

Dr. Bohrer: The law ought to make that provision.

Mr. Smith: Then, again, there were letters written to the members of the House and Senate that it was a political graft, that it was a personal graft, and I don't know what all. I never paid any attention to the letters, and never read any of them.

Mr. Moore: By whom were the letters written?

Mr. Smith: By some who claimed that they were bee-keepers, and that it was all unnecessary.

Mr. Wilcox: Perhaps our experience in Wisconsin in getting a foul brood law might be considered in connection with this. Our law provided that the inspector should be appointed upon the recommendation of the State Bee-Keepers' Association. It stood that way until in 1898 a committee of lawyers, when they came to that law, struck out the clause relating to the recommendation, and left it that a foul brood inspector should be appointed by the governor, and the Legislature approved the revision as made by the committee. Our foul brood inspector has been appointed by the governor, and we have always been successful because we have had the same inspector first and last.

Dr. Miller: I doubt the wisdom of our spending time on that point, because we have at the capital two men who are thoroughly competent to do all that can be done. I am speaking now of the president and secretary of the State Association. I believe they will do all they can to secure such a law, and I doubt if there is anything we could offer that would be any advantage to them.

Mr. Moore: May be the president of the Illinois State Association can give us some advice as to how we can help to get such a law.

Dr. Bohrer: We had a good deal of trouble in Kansas, and when we tried to get a bill through the Legislature creating a State bee inspector, they would not hear of it. It provided for an appropriation that looked big to a good many, to the members of the Legislature. Then we formulated a bill providing for the appointment by the county commissioners of a county bee inspector who should be recommended by the bee-keepers of the county, and he was to be paid by the county treasurer, the same as any other county debt was to be paid, the property to be assessed or taxed through the county commissioners. That way, we got it through.

Mr. Kimmey: I asked this question because I wanted to know the arguments for and against. I know a number of the members of the Legislature. I know a good many of these fellows who are raising a row down there now, and I want to know what arguments I may expect to meet if I have occasion to talk with these men.

Mr. Smith: If the members of this Association that live in the State of

Illinois will ask their members of the Legislature to vote for that bill, I will guarantee you that it will pass. Now, I will tell you that the information against the law that went to the Legislature came from this Association. They objected to that bill—very sorry it should happen.

Mr. Kluck: If the bee-keepers of Illinois were a unit to have this foul brood law, we would have it the first session of the legislature; but we find so many that don't care, so many that don't know, and a few that don't want it. That is the only thing to hinder. If the bee-keepers would go to their representatives and tell them that we want such a law, we would have it.

Pres. York: That is the thing to do.

Telling the Honey Crop.

"What has the average bee-keeper to gain by telling the public what his crop is, and also by advising others to engage in bee-keeping? What do we, as an association, gain by advising beginners to go into bee-keeping?"

Mr. Wheeler: I think that is a good question. I think it is of vital importance to this bee-keeping community as to how they are to dispose of their honey, what we are to do with the crop after we get it. The woods are full of honey and there is no apparent market for it. The market is slow this year, and I think it would be a wise thing for this Association to spend an hour in discussing the manner of selling honey, rather than some other foolish question.

Mr. Horstmann: I don't think there is anything to gain by telling the public what your crop is, because it isn't the public's business what crop you get. But I don't think any one should be so selfish as to keep his business all to himself. If any one wants any information about bee-keeping, you should give it to him. If any one asks me if there is any profit in keeping bees, I will answer him, and give him all the information he wants, and will not charge a cent. I don't think it would hurt me if any one would start next door.

Mr. Wilcox: I think that is a good question. I may not agree with Mr. Wheeler or Mr. Horstmann in their conclusions. I am very positive in my own mind that it is an advantage to all bee-keepers to tell what their crop is. I will answer one question at a

time, because I wish to speak to the point and nothing else. If no one told what the crop was, how would you know what price to ask for your honey? If no one told what their crop was, how would we know what the honey crop of the country was, and what the market ought to be? How would we find out if nobody told? If the bee-keepers would keep it to themselves and never let us know what their crops are, how could the market establish prices? We cannot get information without giving it, because each man gives to the other, and he receives in return the same information from him. It is the means of maintaining steady prices. Without it they could not be maintained; the trade could not be regulated; they could not establish prices; they would not know what the prices ought to be. This fall I had to wait until I got reports from various States before I knew what to ask for my honey, before I dared to offer it on the market. Neither did I dare to buy. And it is so with every dealer. He cannot know what to ask for his honey until he knows something about the crop of the country.

Mr. Holbrook: Emphasize the word "public," and it will change the whole thing.

Dr. Miller: It seems to me the question as discussed so far is as to whether there is anything to gain or not; and the question really is, what is there to gain? This occurred to me: The Agricultural Department of the United States spends thousands of dollars to get information in advance as to the wheat crop, for instance, and this Department is supposed to be in the interest of the farmer, and that knowledge is spread broadcast over the land, as to what the wheat crop is. They will tell you beforehand what the prospect is when there is no crop, and they will tell you what the prospect is after the wheat has grown, and they will tell you about it when it is harvested. They make public all about it. I don't know whether this applies to the honey crop; but if not, it will perhaps be a good thing to make public the crop. Why is it not good to make known the honey crop? I am not answering the question.

Mr. Wilcox: It could not be made public if the bee-keepers would not tell it.

Mr. Kluck: I recall an incident of a.

prominent bee-keeper of Freeport, Ill. He did not do anything else but keep bees, and had an early crop of honey. He marketed some of that honey, and had it inserted in the Freeport papers that there was a tremendous crop of honey. Honey dropped in ten days from fifteen cents down to ten, on the insertion of that one article that there was an immense crop of honey in Freeport.

Dr. Miller: Was there an immense crop?

Mr. Kluck: No. It appeared so at first, but it was not so.

Mr. Holbrook: So you see where the bee-keepers were who sold their honey at ten cents!

Mr. Whitney: That was simply the local market?

Mr. Kluck: That was the local market.

Mr. Whitney: For instance, it did not affect the Chicago market?

Mr. Kluck: No, sir.

Starting New Bee-Keepers.

"What has the average bee-keeper to gain by advising others to engage in the business? What do we, as an Association, gain by advising beginners to go into bee-keeping?"

Mr. Whitney: I am interested in that because I have taught at least a hundred people how to keep bees within the last three years. They went into it, but I guess they dropped out of it in two or three years. But there is this gained, it gives individuals an opportunity to learn something about bees and honey. The average individual throughout the country, it seems to me, is more ignorant in regard to bees and honey than in regard to any other subject. Some intelligent people in Lake Geneva, Wis., have asked me about the "king" bee. They know so little about it, and there is satisfaction gained, to say the least. I don't think there is any injury to the honey-producer to instruct people how to keep bees.

Pres. York: Don't you think these people who drop out of bee-keeping learn to use honey, and will be honey consumers afterwards?

Mr. Wilcox: What has Mr. Whitney gained by teaching these people about it?

Mr. Whitney: I sell them lots of

honey. I sold a colony of bees last fall for \$10.00.

Mr. Kimmey: It seems to me that there is an intimation that there is something to lose both by reporting your crop and advising somebody else to go into the business. In the one case, if you let the public know how much honey there is, the price may drop. In the other case, there would be more honey produced than there would be sale for if a great many people went into the business. I think both suggestions are wrong. I would ask, what is the honey-producer liable to gain by advising other people to go into the business. I would say that I think he is liable to gain enemies. As I look over the five or six years I have had some bees, and have observed others who have started in the business and fizzled out; it seems to me that that is the last business I should advise the ordinary man to undertake as a business, just as a business. I think I would say to him, "Go and learn the plumbers' trade; be a carpenter, clerk in a store, or even be a lawyer!" Now, three or four years ago we had a good honey crop, and it looked to be a nice business. Next year, I had to feed my bees nearly all summer. The year 1907 was nothing to brag of. This year has been a good exception, and it strikes me, it is not a business to advise any one to go into. But, as I said before, as far as letting the public know what your crop of honey is, I think it is the thing to do. The more information you have in your mind and give to the world, the better the world is for it, and the better you are for it, and the more people engage in bee-keeping the better price there will be for honey. Just imagine that I am the only bee-keeper in the world. Suppose any of you fellows would buy honey from me? You would say, "I like sugar better. I can get sugar for five cents a pound, and this is fifteen cents a pound." I believe the more honey there is produced, and the more bee-keepers there are, the more sale there will be for their commodity.

The convention then adjourned till 9:30 the next day.

SECOND DAY—Morning Session.

The Convention met pursuant to adjournment, with the President, George W. York, in the chair.

The session opened by Dr. Miller leading in prayer, as follows:

"Our Father and our God, we thank Thee for the blessings that we have enjoyed. We thank Thee for the enjoyable time we had here yesterday. Grant that we may make good use of all that we have learned. We pray that Thou wilt forgive anything that has been amiss in our thoughts or our words. Grant now to direct us this day in all that is done. May we realize that by Thy blessing we get all that we get out of bee-keeping and all our enjoyments in every way. Hear us, bless us, we ask in Jesus' name. Amen."

President York: We are glad to have Dr. Miller with us. He was the first and only President of the Northwestern Bee-Keepers' Association many years ago.

Two or More Queens in One Hive.

"Has any one kept two or more queens in a hive at the same time, and what was the result?"

Mr. Kluck: You can keep two or more queens under certain conditions, where all at once you will find one of the queens missing.

Dr. Miller: Probably there is not one here but that has had, at some time or another, two queens in one hive. Since we have clipped queens' wings, we know more about some things, and I suspect it is a very common thing that the old queen will remain in the hive for some time when the young queen takes her place. It is an unusual thing to have anything but the old queen and her daughter in a hive together, but I did have in one case—I think it was an accident—where two got together that were, so far as I knew, not related. That question possibly, however, refers to the Alexander plan of having two queens in one hive. You can get two queens in a hive that are not related if you take two old queens and introduce them at the same time, when the flow of honey is on, and you can perhaps get younger queens. But it is a pretty hard thing to get two queens that are not pretty well along in years, or months at least, to stay peaceably together in a hive; and as to any practical use in it, I very much doubt if there is any use in it at all. There was a good deal of talk about there being an advantage in it, but I think there is not, unless you

could have two queens in a hive over winter, but they will not do it. In the spring, one or the other will be gone. This has been advanced—that if you can have two queens in a hive in the spring you can build up the colony twice as fast, and there is a distinct gain in that. But the fact is that one queen will lay all the eggs that it is easy to take care of. I don't think there is anything in having two queens in a hive, and I spent a lot of experimenting on it, too.

Mr. Taylor: Especially when one queen will fill eighteen Langstroth frames.

Mr. Dadant: I should very much like to hear any bee-keepers who have had any experience in the matter. I have not tried it myself. I have seen so many times swarms joined together at the same time, and they got rid of all the queens but one. I had no faith in it to try it because I thought it was a waste of time. I would like to know if any one has tried it. I was looking for Dr. Miller to make about such a report. I have been watching the bee-keepers' journals, both in Europe and in this country; they have run away with it. I see lately, one man trying it and putting two queens together, and he found eggs at both ends of the hive, and concluded the two queens were laying. But that would not be any evidence to me. I believe there is a great deal of imagination in the idea that two queens can lay for a whole summer, or even two or three months, in a hive.

Mr. Taylor: What beats me is how there can possibly be any advantage.

Dr. Miller: The advantage I was after was the having two queens in a hive over winter, and that would be an advantage if you got to that.

Mr. Taylor: What advantage would there be in it?

Dr. Miller: There would be the advantage if I have two or three weak colonies to unite in the fall.

Mr. Wilcox: To use the surplus queens in the spring?

Dr. Miller: Yes. Another advantage, and a very important one, was that by having two queens in a hive you did not have any swarm. I think that got me rather more than the other thing. Mr. Alexander said, where you had two queens in a hive that kept down swarming.

Mr. Taylor: It will not do so.

Maintaining Good Prices for Comb Honey.

"Is it possible for bee-keepers to maintain the good price of comb honey after such a crop as the last one?"

Mr. Dadant: I don't know who asked that question, but I am one of those who believe it can be done. Bee-keepers should not go down town and take what is offered to them, but set a reasonable price on their honey and stay with it. They will get their price, if they will advertise it and drum it a little as other people do their business. We have never taken our honey to the market and accepted the prices offered until they were suitable. We have always got fairly good prices for our honey. We ought not to ask exorbitant prices. But I believe, if we stick together, we can get good, fair prices.

Mr. Wilcox: Will the lowering of the price of honey increase the consumption of it? If it will not, we can just as well maintain a fair price for producing it; but if it is necessary to lower it to increase the consumption, then the natural laws may govern.

Mr. Taylor: If you lower it, the jobbers will get the same price they got before; the retailers will get the same price, and the consumers pay just as much. Nobody is out but you.

Mr. Wheeler: This is a question of vital importance to the bee-keeper, more important than any other question that has been discussed. I think that the price of honey this year in the wholesale markets on the street is below the price of any other commodity that is being consumed at the present time, and it is simply by clogging the market. That clogging of the market is caused by honey being dumped in here, and people that crowd in early think they will get a good price, but they get simply what the wholesale man has a mind to give. The price varies all the way from ten cents for the best comb honey. A person can go in and buy comb honey at any price they have a mind to set on it, and it demoralizes the price of honey. I am around among the grocery men all the time, and I keep in closer touch with the trade than most of you, the retailer and wholesaler, and all of you. If Mr. Moore and I could have had the control of the Chicago market, we

could have kept the price up, as it ought to have been. We kept it up for a while, but this honey in the market finally swamped us. We could have got a good price for honey the whole year through if we could have controlled it. Pork, eggs and all the commodities are bringing as much as they did a year ago, and there is no reason why the beautiful white clover honey coming into Chicago should be given away—no reason except that these people dump their honey on the market and take what is given.

Mr. Moore: Mr. Wheeler, tell what you got for your first comb of honey here.

Mr. Wheeler: Sixteen and seventeen cents a pound.

President York: From the grocer?

Mr. Wheeler: Yes, sir, right along through September.

Mr. Moore: I got eighteen for the first.

Mr. Wheeler: Now you have hard work to give it away.

Mr. Whitney: It seems to me one way to secure better prices is to get all the bee-keepers of our neighborhood to join the bee-keepers' association and attend a convention like this, and hear people talk about ways and means to secure better prices. Now, I know of a case up in Wisconsin where a grocer told me last summer that he had gone out into the country and found a fine lot of clover honey at ten cents a pound. The producer of that honey took no bee-paper and belonged to no bee-keepers' organization, and was not posted. If we had all these bee-keepers members of some bee-keepers' association like this, and they would take a good, live bee-paper, there would not be any comb honey sold for ten cents a pound to the grocers or anybody else. Now, I will guarantee to add one extra member to this association within the next year, or I will pay his dollar at the next meeting if I don't succeed in getting him. I think that is one of the best ways that we can secure better prices. We have talked about better prices every time I have been here at these conventions, and yet, if we have a reasonable crop, the honey prices are away down. Money has been provided to advertise, and yet we don't get any better prices. The fact is, that the ordinary bee-keeper is not posted, and he needs to be educated.

Mr. Wheeler: Let me speak of one thing in connection with what I said; that is, that the retail price of honey changes very slowly. It does not change with the wholesale grocer. The honey I sold last year for nineteen and twenty cents a pound, the grocer got twenty-five cents a pound for. Some I know are retailing their honey at twenty-five cents, and are buying from me five cents cheaper. They do not change their price. And there is a great deal of harm done by these wholesale houses sending out postal cards or posters telling people to hurry their honey in and get the top market price. You know they get that honey, and then the bee-keepers wait and wait for their returns. You all know how the returns come in after they get hold of the honey. That goes onto the market at any price the groceryman has a mind to offer. There does not seem to be any stable price for honey in the wholesale market. They will size a man up, and get what they can out of him for it.

Dr. Miller: The view that Mr. Whitney gives us is a good one, and at the same time the incidents that I have in mind show that it is not entirely reliable. I have in mind a man who I suppose takes the bee-papers. He was sent as a delegate to the State Convention for his local society, and a grocer told me that he had bought honey from him at ten cents a pound this year.

Mr. Moore: Comb honey?

Dr. Miller: Comb honey, he bought at ten cents a pound. The thing that Mr. Wheeler mentioned is really the thing that ought to trouble us, and I don't see the remedy—don't see the way out. When honey goes away down, and the producer will sell it, as that man did, at ten cents a pound, then you go into a grocery store here in Chicago. I went into one and asked the price of honey, and they told me it was twenty-five cents a section, which would be about twenty-seven cents a pound. For them to sell for twenty-seven cents what the producer gets ten cents for, seems to show that the consumer and the producer are not getting their fair share of the deal, and I don't know the remedy.

Mr. Moore: Just one word. I want to say that the condition of the market last year helped us on this year's sales. Honey was scarce last year. I paid twenty cents a pound for white clover

honey to sell again. The stores were selling white clover honey for thirty cents a pound.

Dr. Miller: What time of the year?

Mr. Moore: The latter end of the season last year.

Dr. Miller: In-the fall?

Mr. Moore: No, in the spring. Fancy white clover comb honey is not on the market after the first of April; from April to July there is very little, and at that time the price soars up, where they insist upon having that grade of honey. Being scarce last year helped us greatly. I was to get a couple of tons of honey from a bee-keeper in Iowa. I had no trouble in getting eighteen cents a pound for it. They remembered they had paid twenty and twenty-two not very long before. About two weeks after that I got a second shipment. By that time the wholesalers were getting five hundred or a thousand pounds, and it was a case of get rid of it at any old price, and I couldn't get sixteen cents as easily as I got eighteen.

Mr. Baxter: Mr. Whitney's suggestion was a very good one, but it won't work, because the people, as a mass, won't attend these conventions. There is only one way for the members of an association, and that is for each one to make himself a committee of one and sell as much as he can in his home market, direct to the consumers or through the merchants, at fair prices, and educate the people to use it and to pay a fair price for it. Then you will get fair prices. But so long as you dump everything into one market like Chicago, it will be the same with the honey business as with the fruit business, and you will get nothing for the honey. The demoralization of the market here will demoralize the market all over the country.

Mr. Wilcox: I was about to say the same thing as Mr. Baxter has, and it was that that led me to become a dealer. My neighbors were selling their honey so cheap, and they were laughing at me. I turned around and bought all the cheap honey, and I had to sell it, and I sold it to the people in the Western States for family use, and to retail grocers at a fair price, and I have continued year after year. Even this year they came to me to buy their honey because they couldn't sell it in the city markets at the price they had formerly sold it.

I told them I would buy it if they wanted to sell it at the present prices. I told them if they would wait a month or so, they would get more. I bought all that they insisted on selling, but some of it they kept and sold for more later on.

Mr. Taylor: I think that that is the only practical solution. I think that if bee-keepers who attend conventions even would make a point of selling their honey at home, which they might do, most of them, at least, they could make honey scarce, even in such a year as this, in these large cities. We don't know the capacity that there is for the consumption of honey right about us, in our own little towns. If we would make it a point to canvass the neighborhood, we would find almost everywhere people who wanted honey. It takes but a little work by an individual to dispose of quite a large crop.

Dumping Honey on City Markets.

"Can the small bee-men be persuaded not to dump their crops into the large commission centers, demoralizing the market?"

Mr. Kluck: I don't believe the small bee-keeper that does not read a bee-paper can be persuaded not to dump his honey on the market. That is the man we have to contend with. When he has two or three hundred pounds, he thinks he has a lot, and he has to haul it to the market. If he is offered ten cents, or even nine, he will take the nine or ten cents before he will haul it home; and it is hard to educate a man who does not take a bee-paper. What Mr. Wheeler says about selling honey for ten cents to grocers in this city, I think I know who the man is; he perhaps belongs to our convention. He got eighteen and nineteen cents for his comb honey the first shipment last year. The next time he got seventeen or eighteen. Then he waited until winter time, and shipped a whole lot of shipping cases separately and loose, and when they got to Chicago they simply mashed \$60.00 worth of honey for him, and made him so that he was ready to take almost any price, so that he would not lose. It is a hard matter to educate all bee-keepers. I have in mind a lady who had trouble with her bees. She had melted up the beeswax. She went to the druggist I had always sold my beeswax to, and said

she had a lot of beeswax that she wanted to dispose of. She said: "I think I ought to have eight cents a pound for it," and he had always paid twenty-five cents. He said: "I will do better than that; I will give you ten cents for it!" Think of that!

Mr. Holbrook: Along the line of increasing sales in the neighborhood, as Mr. Taylor mentioned, if I recall rightly, I have read that Mr. France, who lives in the little town of Platteville, Wis., had disposed of twenty thousands pounds of extracted honey per year; that is ten pounds for every man, woman and child in town. I am quite certain I am right in the figures. That will give one an idea of what can be done in the neighborhood by keeping at it. There are plenty of people in Chicago who don't use ten pounds of honey a year.

Mr. Kluck: They have a Normal school at Platteville, Wis., and those students come from all over the State, and are trying to board themselves. That is where the big sale of honey comes from.

Mr. Wheeler: I don't know to whom it is sold.

Mr. Whitney: What has been said in regard to the increasing of sales, or the price for honey, seems to indicate that individuals in the neighborhood should keep their ignorant bee-keepers posted as to what honey is worth, or else buy it. It seems to me that if two or three enterprising men in each locality where honey is produced will club together and buy that honey, as has been suggested, here is really a solution of the question of prices. Now, it does seem strange that anybody who produces good comb honey should sell it for ten, twelve or fourteen cents, or any such low prices for comb honey. I cannot understand why they do it. It is simply because they are ignorant of the price, and need educating, and a good bee-paper or an association like this will educate. It suggests to my mind the foundation of a trust to control the honey market, so that we can maintain prices like other associations we could mention. It might not be in accordance with the laws, perhaps. How about the Colorado Honey-Producers' Association? Do they maintain prices there through their association, I wonder? Why would it not be feasible to organize something of that kind to maintain prices?

Mr. Taylor: We have not enough John D. Rockefellers!

Mr. Baxter: I think it is feasible, but it has to be done in a systematic way, and you have to use methods that are not the kind of methods bee-keepers would use. You would have to organize like the tobacco people in Kentucky, and bee-keepers won't come to that. But I know a great deal depends upon individuals. If individuals in their own localities, now, say the people of this convention, go home and determine to educate the bee-keepers, and to see that no honey is sold in their home market at a ridiculously low price, they may do it. Take our home town. There are three bee-keepers, and no one of us undersells another. You can go to any of the other bee-keepers, and they will not undersell me. The barber, who makes a side-issue of keeping bees, will sell his small lot, ten, twenty or a hundred pounds, and we cannot control the price unless we buy it. There is no use trying to educate him; but the regular bee-keeper, that depends upon his profit for a livelihood, more or less, that man you can educate. If you will go to work and labor with those in your home market, and club together and push the sale of your honey, you will have no trouble in disposing of tons upon tons of it that will never come to these cities that do come now.

Getting Queens Fertilized.

"What conditions are necessary to have queens fertilized from an upper story, with an old queen in lower story, and with excluder between them?"

President York: How many have succeeded in getting queens fertilized from an upper story, with the old queen in the lower story, and with an excluder between them? (Four.)

Mr. Stanley: It can be done under conditions, by having a queen-excluder between the two colonies and having partitions in, and having the entrances on the side of the hive. In that way it can be done; two or more queens can be fertilized.

Mr. Taylor: If you have as many bees as you want when a swarm issues, if you hive the swarm upon the old stand and shake out some of the bees from the old hive, then put a queen-excluder upon a weak colony,

that needs some strength in it, and set the old hive with the queen-cells in it upon the top of the queen-excluder, and put the cover on with a nail or something under it, raising it sufficiently for the bees to pass in and out, you will get a fertilized queen there in due season.

Mr. Wilcox: I have had success in a number of instances, but in every instance, so far as I can recollect at the present time, the queen issued from the bottom story, with the queen-excluder on the top of the first. In that case, where we extract from combs containing brood, and set them on the top, with a three-story hive, they do pass out at the upper story, and become mated in both the first and third stories.

Mr. Wheeler: I would like to ask Mr. Taylor what the object is in setting the hive over the weak colony.

Mr. Taylor: All the object I had was that I had bees enough, and did not want to increase, but strengthen, the colony upon which the brood was placed. The result was, without any intention on my part, while the cover was sufficiently loose, I had a laying queen in the upper story as well as the under.

Dr. Miller: So far as I know, I had a case of that kind, the first that was on record. I don't know how many years ago that was. I had some combs that I wanted the bees to take care of, and over a colony I placed three stories of empty combs, and in the upper story I put a frame of brood, so that I could feel sure that the swarms would not occupy the upper stories, and have the bees pass up and down. Some time afterward, I went to take off that upper story—quite a while afterward—and was surprised to find a laying queen there. That brood-comb was occupied, and the bees, being so far away from the others, started their cells, and there was a hole above. I don't know how that hole happened to get there; but at any rate that queen had gone out and been fertilized, and I had a laying queen there. There was no excluder above. I have some times reared queens in a lower story, having no excluder, but a close cover, so that the bees did not readily pass from one story to another, but I have had them reared in the upper story. But as to putting the thing to practical use, I have not been a success, and as to

having a queen reared and fertilized over another with a laying queen, with me that is not a success.

Mr. Wheeler: Have you tried it?

Dr. Miller: Yes; I have tried it in late years. After having that case so many years ago, I thought it was "a fine thing; but I cannot succeed now. I think Mr. Doolittle mentions that in his book. There are so many failures about it.

Mr. Wheeler: Even with a queen-excluder?

Dr. Miller: Yes, even with a queen-excluder.

Mr. Whitney: Do you know how old the old queen was in that hive?

Dr. Miller: I don't know. That might make a very decided difference. A very young queen below would encourage an old queen above. In any case, I think it was entirely separate from the other; I don't believe that young queen went down. I don't know the age of the queen, and that may have much to do with it.

Mr. Wheeler: If the honey-flow ceased before the young queen was mated, there would be danger of her killing the old queen also.

Early Blooming of Yellow Sweet Clover.

"How much earlier will the yellow sweet clover bloom than the white sweet clover?"

Dr. Miller: In my locality, three weeks. I think it is generally claimed two weeks, but this year there was a difference of three weeks.

President York: The yellow usually blooms three weeks earlier than the white, I believe.

Mr. Kannenberg: I find, in our locality here, it blooms four weeks earlier than the white clover. We tried it last year, and the yellow clover was four weeks earlier.

Mummified Lizard.

President York then read a letter from C. T. Wise, of Acton, Calif., as follows:

"I send you by today's mail (under separate cover) a small California lizard, or 'swift,' that I found 'mummified' in one of my colonies of bees. The little animal had evidently entered the hive at the front and run to the rear of the hive, where it had been killed by the bees, and then so en-

cased in propolis as to preserve it in its present condition.

"It was somewhat of a curiosity to me, so I thought it might be interesting to you. I trust it will reach you all right.
C. T. WISE."

Preventing Swarming With Young Queens.

"Can we prevent swarming by giving young queens?"

President York: How many have succeeded at it? (No hands were raised.)

Dr. Miller: I don't know whether to raise my hand for that or not. If you get a colony to rear a young queen by taking the old queen away, it is practically certain that that colony will not swarm that season.

Mr. Whitney: Unless they rear two.

Dr. Miller: O, yes; you might have what would be practically a second swarm by rearing two. I will put it this way: If you succeed in having a colony rear a young queen, and that queen gets to laying, after she gets to laying you are safe from any swarming. If there were two or three young queens reared, you would be pretty sure to have swarming. I thing Mr. Hutchinson did practice getting young queens from the South and introducing them early, and he felt safe from swarming by doing so. Is that not right, Mr. Taylor?

Mr. Taylor: I think so.

Dr. Miller: I think that it is. Now, with me that will not succeed. If I have a young queen and introduce her early in the season, as I did, I can count on swarming pretty certainly; but if the young queen is reared in the hive, in that case there would be no laying for some time, usually about ten days. That seems to make a difference. Gravenhorst, an eminent German authority, gave that as a fact a good many years ago, that where a colony reared a young queen, that made the colony immune to swarming. But I did have this year, I am sorry to say, two colonies swarm which had reared a young queen in their own hives. But it was an exceedingly bad season for swarming. As a rule, I would count it a safe thing, if you take away a queen from a colony, give it a queen-cell, and let them rear a queen, that colony will not swarm. I think it would be safe ninety-nine times out of a hundred.

Mr. Wilcox: You said there would be no laying for about ten days after the removal of the old queen. Of course, you know.

Dr. Miller: Would there be?

Mr. Wilcox: There would not be for twenty days, and if you have no queen for twenty days you will lose more bees than a swarm.

Dr. Miller: If you have conditions such that there will be no laying for ten days—for instance, if you take away the old queen and introduce a virgin, I think that would make the thing safe enough. In that case you would have no laying for about ten days. I know a little about bees, and some times my figures get wrong.

Mr. Baxter: Would not that depend a great deal upon circumstances and conditions? That will apply very well to producing extracted honey, but not so well to producing comb honey, and especially in producing comb honey if the season happens to be a prosperous one, a liberal flow and a long flow. It depends upon conditions.

Dr. Miller: I am talking altogether about comb honey.

Mr. Wheeler: I have been through a good deal in that way. Some years I have found that introducing a young queen would work finely. Next year it would work just the opposite way—would not have any effect at all. I think the season and the condition of the bees has everything to do with it. I am afraid that when some of you start in next spring, take out your old queens and put in young ones, you will rue the day you ever heard anything said about it. It might work all right next year. It seems to me it is a dangerous thing to do.

Mr. Dadant: I would like to ask Dr. Miller a question. Isn't it a fact that if you rear a young queen about the beginning of the swarm season, and take the old queen out, and rear a young queen in the hive when the bees might make preparations for swarming, it will insure their swarming instead of preventing it?

Dr. Miller: In other words, this: Take a strong colony that perhaps have no notion of swarming at all, and would have no notion of swarming if you let it alone, take its queen away, and you are practically certain it will swarm.

Mr. Dadant: I think that, in considering this matter of young queens

and what will prevent swarming when we have young queens, we should find out the reason why colonies with young queens will not swarm; what is the reason they will be less inclined to swarm with young queens than with old ones. There are, in my mind, two reasons. One of them is that an old queen is likely to be superseded, and as it is at the time of the heaviest work, so that in trying to replace that queen by a young one at the time of swarming, they are induced to swarm. Another reason which causes the bees to swarm when they have an old queen is that an old queen lays drone-eggs more readily than a young queen. All those who have experience in the matter will acknowledge that a young queen is much more ready to lay all worker-eggs than an old queen. She enjoys laying, and enjoys laying worker-eggs. The queen that lays drone-eggs is tired of laying, or when the drone-cells are in her way she cannot avoid it. The presence of drones is a great incentive to swarming. They are bulky, lazy, and keep the hive too warm, and all those things tend to swarming. For that reason, I believe, the young queens, if in the hive early in the season, will tend to prevent swarming, while the old queens will tend to incite swarming. But there are other causes. If your hive is too much crowded, but your queen is young, the bees will have a tendency to swarm. If your hive is in the sun; if your hive is too full; all those causes will make your bees swarm. It does not make any difference if you have a young queen, if the conditions are such as to incite swarming, you probably will have swarms anyway, and I think the main thing is, in securing non-swarming bees with a young queen, to have all things favorable—plenty of room, plenty of ventilation, and plenty of shade.

Dr. Miller: In corroboration of that view, let me give you one instance. I had a colony, but I cannot recall now—for it was years ago—whether they had swarmed or not, but I think they had swarmed. At any rate, they had made full preparations for swarming, and I took away their old queen and introduced a young queen that had been laying not more than three or four days, and within two days the colony swarmed with that young queen.

President York: I should like to have the Resolution Committee meet, so as to report before noon. In place of Mr. Kimmey on the Resolution Committee, I will substitute Mr. Baxter, so the committee will be Dr. Miller, Mr. Baxter and Mr. Kluck.

Dr. Miller: I don't like to do any shirking, but if you can put some one else on that committee in my place, I will take it as a great favor.

President York: I will name Mr. Taylor in place of Dr. Miller.

Mr. Taylor: Take me off.

President York: I will let it stand, Mr. Taylor, Mr. Baxter and Mr. Kluck.

(Recess.)

President York: We will first have the report of the Resolution Committee. Mr. Baxter will read the report:

Mr. Baxter then read a resolution on the foul brood law.

Park Ridge, Cook County, Ill.,
March 24, 1909.

To the Honorable, the Members of the
Senate and House of Representatives
of the State of Illinois:

Dear Sirs:—

The following is a copy of a resolution almost unanimously adopted at the regular annual meeting of the Chicago-Northwestern Bee-Keepers' Association, held at Chicago, Ill., December 2d and 3d, A. D. 1908:

Whereas, A certain disease of bees called "foul brood" is widespread and virulent in the State of Illinois; and,

Whereas, At present no laws are in effect in Illinois upon this subject; and,

Whereas, Bee-keepers everywhere are almost unanimous as to the pressing necessity for such legislation, commonly called "Foul Brood Laws;" and,

Whereas, A large number of the States have passed such "Foul Brood Laws;" therefore,

Resolved, That the Chicago-Northwestern Bee-Keepers' Association in Convention assembled, does hereby petition the Legislature of the State of Illinois to place upon the statute books in State of Illinois certain laws about the suppression of a bee-disease called "foul brood," similar to the Wisconsin law about bee-diseases; and,

Resolved, That the attitude of certain bee-keepers in opposing such legislation is a mistaken attitude, and

that such bee-keepers are not representative of the bee-keeping industry, but represent only themselves.

GEORGE W. YORK,
President.

HERMAN F. MOORE,
Secretary and Treasurer.

President York: You have all heard the reading of the resolution formulated by the Resolution Committee. What will you do with it?

Mr. Baxter: I move its adoption.

The motion was seconded.

Mr. Reynolds: In regard to writing those letters, I wrote letters to the Legislature to stop the foul brood law, and will do it again until I know the contents of the foul brood law that it is proposed to pass. The foul brood law you tried to pass before had a clause in it for the inspector to give notice twenty-four hours, giving him authority to burn if it was not done within twenty-four hours. If I was short of supplies, I could not get my supplies in less than ten days. A foul brood law should give any one plenty of time to clean up, provided he is willing to do so. Until I know what the foul brood law is, I will object to it.

Mr. Smith: I think the gentleman's objection is well taken. That question was gone over, and it was suggested that the inspector, if he should call at a certain place where there was foul brood, would be put to great expense to come back again in ten days, and that form of notice of twenty-four hours was so that he could remain on the ground with little expense; but if there is any objection to it on the part of the bee-keepers, we don't want it that way. We don't want to do anything that is arbitrary. If any bee-keeper signifies his willingness to clean up as soon as he can get supplies, if he should not have the supplies on hand necessary to change his bees, I don't think there is any objection. Let it be ten days. We don't want this law to be a loss to any one.

Mr. Reynolds: Why does that resolution read "stringent"?

Mr. Smith: As far as I know, "stringent" means that it gives authority.

Mr. Taylor: Now, this fixing a time—I think that is a great mistake. It isn't necessary to put twenty-four hours, or even ten days. I don't think any bee-keeper ought to be re-

quired to change his bees within ten days. The conditions are often such that it isn't advisable. I was called, for instance, to examine an apiary for foul brood. It was during the hot weather in September. It was about all I could do at home to keep my own bees straight. Everything was dried up, and if the flow came at all less than an average of bees were after it. I had to watch them. It would be manifestly unwise to undertake to examine bees for foul brood under such conditions, and such conditions might last for a month. Any bee-keeper ought to have considerable leeway. With regard to the time when a man operates upon his bees, if he does it within the season, within the year, it seems to me that would answer all requirements so far as the prevention of foul brood was concerned.

Mr. Whitney: Isn't the proper place to argue this question of what sort of law you will have, before the committee who has charge of a bill for a foul brood law, instead of arguing that question here in convention? We simply want a resolution that we shall have a suitable, sufficiently stringent law to control this matter of foul brood. The question of what sort of a law we will have might be considered at Springfield, it seems to me, before the committee, and not here. We cannot thrash that question out here if we stayed here until Doomsday.

Mr. Wheeler: It seems to me that we ought to know what we are favoring. All we can tell about what sort of a law we are favoring is by what they have done before. We know what they have tried to get through in Springfield for six years. We know what has been done, and we don't favor any such manipulation of the industry of bee-keeping in Illinois. I, for one, am opposed to it. I believe the bee-keepers themselves are the ones that can take care of their own business, and they will do it. They read and know. There may be a few people that need instruction. Now, there has been a law on the statutes; there has been money appropriated for that purpose, and Mr. Smith has been acting as the inspector. He has had the right, and got his pay for going around and instructing people what to do with their bees. It is a good thing where they need help. I have money

invested, and I don't propose to have a man come into my yard and tell me what I shall do, and I defy any man to come in there and find a thing wrong with those bees. What I am aiming for is the best interests of the bee-keepers. I have no ax to grind; nothing whatever. If a good, honest man comes into my yard at any time, he is perfectly free to do anything he pleases. At the same time, the bee-keeping industry is in great danger. The State law that we had before is plenty ample. Every industry and every bee-keeper has to take care of it himself. I was talking with Mr. Taylor about the inspection in Michigan. What does it amount to? Just as bad as it ever was. He cannot inspect, because he has not the money appropriated to do it. If he had lots of money appropriated, he could not do the business. If he was hankering for a job, he could do it, but he has his own business to do. After you have summed it all up, you cannot exterminate the disease, and I know it. There are men in this room who know it. You can make a bluff at it, and after it breaks out again in a year or two, you can say, some neighbor has it. There is no such thing as exterminating it; it will break out every two or three years. The only way to do is to keep your premises clean and keep the disease out, and every man can do it himself better than another man can come along and say, you do this and that. We don't want a man to go around with authority and step into our business and knock us around by making some silly report, and saying we have foul brood, and some competitor pick it up and knock us out of business. That is not right. We have got to take care of our affairs. Bee-keepers are American citizens, and know what to do, and what not to do.

Mr. Whitney: We want the privilege of attending to our own business, and we know how to run our bee-keeping, and we don't want to be interfered with by any officers? How about the people who own the herds that are afflicted now with tuberculosis and other diseases in the mountains? How about that class of men who have thousands of dollars invested? Only a few days ago several herds in New York State were absolutely destroyed. And so it is with all of these contagious diseases among

animals in our country; and the only safe thing to do is to have some one who has authority and can compel action. It is so with the foul brood disease among bees.

Mr. Reynolds: Should we not be compensated for what is destroyed?

Mr. Taylor: That would depend entirely upon the law.

Mr. Reynolds: That is what we want in that law.

Mr. Whitney: Then go to Springfield and see if you can get it. You cannot.

Mr. Smith: Whenever I hear a man opposed to a foul brood law, I am pretty sure his bees have got it, and he is afraid he is going to have his bees interfered with just at the busy season; but that doesn't make any difference.

Dr. Miller: I don't care now to discuss the matter, but to ask if the President will ask those of other States present, who have foul brood laws, whether it is considered by the bee-keepers as a good thing or a bad thing.

President York: I will call Mr. Wilcox from Wisconsin.

Mr. Wilcox: We have a foul brood law, and we think it is so nearly perfect that we don't wish any change. It is effective for the purpose of prevention, and it is satisfactory, so far as I can learn, to all the bee-keepers of the State. When we first attempted to put it into operation there was some trouble. A bee-keeper or two had foul brood. Their bees had all died. They wished their neighbors to share the same thing. They placed their combs upon the fences, in the limbs of the trees, spread them around the yard; and Mr. France notified them they must take care of them immediately; they must not expose their neighbors' bees to the danger. They ordered him off the premises, and said that they would do as they pleased. He then read to them the law requiring them to take care of their own foul brood, and the penalty for exposing their neighbors to the danger. In a little time they submitted, and since then there has been no further trouble. Now they invite him to come, and notify him of every case. There is no man in Wisconsin who objects to having his bees examined if they have foul brood. Further, they have never burnt any,

that has come to my knowledge—none that has ever been reported. Mr. France goes there, and if they don't know how, and can't take care of their own, he saves their hives, their combs and their beeswax. He destroys only the honey. It is satisfactory in every respect. As to this provision that was referred to in relation to compensation, that has been discussed in our State, and was when we were framing the foul brood law, and we reached this conclusion, that we would say nothing about it. Why? How much is a foul-broody colony worth? Can any of you stop and think a minute? It has it so badly that it needs to be destroyed. The hive can be saved; the frames can be saved, and the beeswax can be saved. How much damage should you pay for the diseased comb? When we came to reason upon it in that way, we concluded to say nothing about it. It is true, the veterinary law of Wisconsin provides compensation for cattle slaughtered. Those having tuberculosis are allowed a price not exceeding \$50.00 for cows, and so on with other animals. We don't wish it for our bees; and the bee-keepers are willing to take hold of it and learn to handle it. It has been a success. Mr. Wheeler says it will break out again. Five years ago Mr. France came within ten miles of me and cleaned out over a dozen apiaries of foul brood, and there has never been a case since in the vicinity; and I believe, therefore, that it can be totally eradicated. I believe this is a wise move, and that you will all be benefited by it, and that I will be benefited by it if I ever buy any queens or honey from Illinois. I said to the members of the Legislature that we were selling from one State to another, and it was necessary, in order to obtain good prices, that we should sell a good, pure article, and not anything that had any infectious disease. We are pleased with it.

President York: The States have been called for. We ought to hear from Michigan, if Mr. Taylor wishes to say anything.

Mr. Taylor: Yes, we have a law in our State, and it is very satisfactory among bee-keepers. Bee-keepers who find they have foul brood are almost universally anxious to have the inspector come and examine the bees, and to direct them how to get rid of

it. Our law provides that in case bees that have foul brood are not properly dealt with and the disease driven out, they may be destroyed, but a reasonable time is given. No particular time is fixed in the law, and it depends somewhat upon the character of the inspector. Now, any law may be abused if the person executing it is unreasonable, and if he is domineering; and that is one thing that ought to be looked to, that such an inspector be selected as will be reasonable, a man who is capable of sympathizing with those he deals with and of getting their good will. There is no great difficulty for any one who is reasonable, in going among bee-keepers, to find every bee-keeper who has foul brood, or who was suspected of having it, willing that their bees should be inspected, and that they should be aided in getting rid of the disease. The law is very useful in a good many cases. Of course, the law, as the Scripture says, is made for evil doers, not those who do well. People who are well-informed who have bees, and who understand what foul brood is, can manage their bees so as to prevent any danger from its spread. For instance, I was called a year ago to Saginaw county. There were bee-keepers there who had discovered that they had foul brood. A prominent bee-keeper there had a large apiary, and he discovered he had foul brood, and he hastily broke up stakes, and scattered the hives, and sold his bees throughout the country, and the country was full of foul brood. People were anxious to have me come and help them to get rid of it. The first apiary I went to, the man had some twenty-eight colonies of bees. There were twenty-one or twenty-three of those colonies diseased, and he hurried around and cured those bees as soon as he could. It was getting along toward fall, but he substituted foundation for the combs, and when I came around again, two or three weeks afterwards, his bees were all in nice shape, the foundation was worked out, and the combs were full of brood. From him I went to a brother of his who had about the same number of bees. I found him anxious to have his bees examined. He had them under a shed where it was almost impossible to get to them. Two or three persons who were interested accompanied me to his place, and he was there, bare-footed, and he pitched in, and when the bees got onto his

legs, he would run and rub them, and get on the other side of the house. I went through his hives and found only two diseased colonies. He said he would attend to them. I went to the next place, two or three attending me in the carriage. This man trotted on behind and held onto the back of the carriage. He said, "Ain't I lucky? Only two foul brood colonies." He went home that night, and dug a hole, and put the diseased ones in it, and covered them up. That was the way I was received. One other place they were all diseased, and they destroyed them at once. Such communities, where they are ignorant of what foul brood is, and yet take an interest in bees, and where it is a good locality for honey, and they find that the business is profitable, they are more than anxious that you should come and examine their bees and help them to get rid of the disease. And of course it is a great benefit. It not only helps them, but it helps all bee-keepers everywhere in the neighborhood.

Mr. Kannenberg: I don't see why any brother bee-keepers are against this foul brood law anywhere. I will tell you a little story. In my neighborhood we had a man who went into the bee business, and he did not know anything about it. He bought one hundred and twenty-five colonies wherever he could buy them, and he said, "I have got books and know how to handle the bees." He went to work and hired a man who knew a little about bees, and paid him \$75.00 a month to handle his bees. He was teller in a national bank here in Chicago, and earned \$150.00 a month. He said, "I will handle those bees and make money on it, and give up my job after this year." So he did. Evenings he used to come home; he went to work and tore them up, and worked until twelve o'clock on his bees. What did he know about his bees when he tried to work them in the night? Today, what has he got? Two colonies. That man was ignorant. If a foul brood law had existed, and the inspector had come and examined his bees and knew that he had foul brood, that man could have been persuaded to say, "I will fix my bees over, but I don't know how." But if an inspector had got around there and fixed those bees up, my neighbor and I would not have had the foul brood. I am glad to say, I have got my foul brood cleaned up now, and I will start in new. But

now if that had not occurred, if we had had a law at that time, I would not have had the foul brood. I don't see how any of those who claim to be bee-keepers can say, "We don't want a foul brood law."

Wr. Whitmore: I am not a member of this Convention, but here is a good place, I think, to give a little word. By profession I am a veterinarian. We have the same laws existing for glanders and all of those contagious diseases, and when we come to a man who has got the trouble, he is the man to fight the trouble, instead of trying to lend a hand in getting rid of those contagious diseases. When we have got any contagious disease hard to handle, it is our duty to put our shoulder to the wheel and get it out of the road. Although we may sacrifice a little, it is better to do that than to have the neighbors all around us sacrifice a great deal more. I think you are on the right track, and all ought to lend a helping hand.

Mr. Dadant: Would it be within the limits of the discussion to state whether foul brood is curable or not? It has been stated that it is not curable, that it is bound to reappear.

President York: That is not quite on the resolution, but there is no objection, I think.

Mr. Dadant: I never saw foul brood until I went to California some years ago. They have foul brood inspectors in almost every country. I inquired, and they all had had it. One man went to a colony and found one cell. It was in cold weather, and he said he would treat it in the spring. I went from one bee-keeper to another in California. I went sixty or eighty miles. They took me in carriages from one to another. I struck one bee-keeper who, the neighbors told me, had had it. We went to his place. He said he had foul brood, and it would always happen. I said that people had cured it. He said, "I have tried to cure it, and I never have succeeded." "Have you got it here now?" He said, "Yes," and he showed me. There was a pile of combs against the wall, some that were chalk marked, and he held them up and showed me the cells with the brood in them. There was a man who couldn't cure it, had it in his honey house, and marked it "foul." I don't believe that kind of a man can cure foul brood.

Mr. Baxter: I am red hot on this question, and I don't know as I ought to say much, as my French blood might run away with me. I believe that it is the height of folly in this enlightened age to oppose a law like this. It would be very well in the dark ages or in a wild state. But now, when we have laws for regulating all kinds of diseases, I should think we ought to do the same with the bee-industry. It doesn't much matter whether it can be cured or not. It can be stamped out. If it can be cured, so much the better. You cannot cure glanders and such diseases, but they can be stamped out, and we want to do that. I know, as the gentleman stated over there, that the ones who have the disease are usually the first ones to prevent the eradication of the disease; the first ones to fight the inspector or the means for eradicating it. It also applies to the human family. Take scarlet fever or small pox—we are always willing to have our neighbor quarantined. If it comes to us, we kick like everything. It is human nature. That is why we should have a law, so as to compel, where it is necessary, the necessary means to get rid of the disease. I know that means have been taken to obstruct the cleaning out of foul brood in this State, and it is for that reason we need a law, to compel those to acquiesce and get rid of the disease; and I believe in recommending a law something similar to the Wisconsin law. We only ask for something that is fair and just to everybody; and in this age the masses have got to be protected, and it is unreasonable that one or two, or a few, should obstruct and oppose anything like this law, and lead the great majority of the people to their ruin. Such a law is necessary; will do every person good. Nobody can have any harm by it, and I am in favor of seeing it through, and I know, from what Mr. McEvoy and other inspectors have told me, that it can be got rid of, and it can be cured if taken in time, and that is what we want to do. There is nothing unreasonable in this resolution. No advantage will be taken of anybody. We only ask what is right and just.

Dr. Miller: I don't see that it would make a bit of difference to me whether we have a foul brood law or not. There is no foul brood around

me. I hope there never will be. But some time I think there might be some case near me. I have had it within twelve miles of me. It was there two or three years ago, and, as far as I know, it isn't any nearer yet; and yet I am just a little afraid that some time there might be a case near me, and I should want, in a case of that kind, to feel sure that I could be protected. As the matter stands now, I should be very much afraid that some farmer with a single colony—and there are a whole lot of Scotchmen around there. I live in a Scotch family myself. Some of you here are Scotch enough to know that if a Scotchman knew he had a case of foul brood around—he is so stubborn—he would not do anything unless it was required by law; then he would yield to the law. I want, for my own safety, to feel sure in the matter. I would sleep more securely. There are States which have foul brood laws, where they have been in operation for some time. You gentlemen tell me that the people are pleased with the foul brood laws, and that the bee-keepers like them. If I have been rightly informed, before those States had foul brood laws, there was objection to them. Am I right in that, Mr. Wilcox?

Mr. Wilcox: There was strong objection in the first place.

Dr. Miller: And that objection has disappeared, if I am rightly informed?

Mr. Wilcox: Yes, sir.

Dr. Miller: If the law was really in operation, the objections of some of our friends here would disappear, and they would find there was nothing wrong about it; nothing bad about it. There is one thing, however, in the resolution as read that I think should be changed. Unless there is a change of sentiment, that resolution could not be unanimously passed. The word "unanimously" is used in two places in the resolution. So long as there is a single dissenting vote, I don't think those words should be there. I move, Mr. President, that the word "unanimously," where it occurs in those two places, be stricken out.

The motion was seconded.

Mr. Logsdon: I don't like to speak in public, but I want a foul brood law very much. I have some bees. I don't want the word "unanimous" stricken out. I want every man here to be

together. I want this foul brood law very much, and I admire, and I just want the men that are looking out for their rights in with us. They will come with us. I wish we had the law, and had one of those men for the inspector, not but what I believe there are others just as good. I wish we had the law, and had one of those men, then I would feel perfectly safe. I don't think I would be unjustly dealt with, yet the foul brood would be exterminated. Don't let that word "unanimous" be stricken out. Every American citizen cannot be blamed for the feeling of self-protection, or for desiring that his rights shall not be placed subservient entirely to any neighbor who may have a little bit of animosity, or a careless or misinformed inspector, or a misinformed neighbor. I believe a careless inspector would be just as bad as a man who piles his foul brood up for his neighbors to get it. I would not be afraid of the law if I could have one of those men for an inspector; and you ought to think it over. I have talked with Mr. France. There was an apiary destroyed within about fifteen miles of me last summer—a man found who had the foul brood. He had all his bees buried, that is, the frames, of course, he saved the bees. Don't let us take out word "unanimous." I believe those men will suggest a way so that we can all get together. I wish the chairman would let one of our opposers speak again.

Mr. Wheeler: I don't want to occupy your time. I want to speak on that word "unanimously." When the law was brought up before, when these people down in the center of the State thought they had things in their own hands, there were things done by inspectors that were appointed by them that were a thorn to us. It showed us what they intended to do when they had the laws in their own hands. We are friends of the bee-keepers. I have been at this meeting for nearly twenty years, and I don't think you ever noticed anything that I have said that showed any desire to injure any one of us, unless I thought that man was trying to injure the whole of us. I may be mistaken. I don't want to be personal. Had my ire up a little, and said something that I ought not to have said. I am opposed to that word "unanimous." I don't want these people to go before the Legislature and say, "We carried the whole thing

unanimously for laws such as we want." There is that word "stringent" in there. We are all in the business for the money we get out of it, and lots of times we get nothing but a little pleasure out of it. We don't want to gouge any one, or be gouged. We don't want to drive any man to the wall or be driven ourselves. We don't want to put anything in this resolution that will show to the Legislature that we want a "stringent" law that will put a star on a man and allow a man to destroy property, and my property, if he wants to. Mr. France is an example, and you all speak of him, and if you can get such a man, it is all right; but we don't want Tom, Dick and Harry to interfere with our bees.

Mr. Moore: I want to plead with these gentlemen to allow this resolution to go in unanimously. Our civilization rests upon the good of the majority. Each one must give up a little of their liberty for the sake of all. That is what our civilization rests upon. Take the administration of the law—these gentlemen are illogical. They say, "Because this may work out badly, we won't have anything." Even the judges on our benches have sometimes been corrupt. Juries have sometimes been corrupt. We won't have any judges then; we won't have any juries. Sheriffs have been corrupt. We won't have any sheriffs. Marriages go wrong. We won't have any marriages. You are talking about the results. We won't have anything because it isn't sure to come out right. You are not logical. The people who have offices want to please the public, their tenure of office depends on it; so that the sheriff and the judge who are before the public want to do the best they can, and they are apt to do things honestly, other things being equal. To say you don't want anything because they are sometimes corrupt is not logical. You have got your remedy. A man comes to you and says, "I am going to destroy your bees." You can get an injunction. The man himself can go and get the paper, and go on a fast train or a fast horse, and stop it, and no inspector would attempt to do anything if a man said, "I am going to get an injunction." No injustice is going to be done to anybody. In the name of logic, in the name of all the bee-keepers in the country, who are ninety-eight per cent in favor of foul

brood laws, and in the name of an inspector by the name of France, a good man going about doing good—you won't dare to say to me, there is no good man in Illinois, and that France is unique—I plead with you to allow this to be unanimous.

Mr. Baxter: Suppose we vote to retain this word "unanimous," and there are three or four votes against it, would it be unanimous?

President York: No.

Mr. Baxter: Why not call the roll, and, if you can, show to the Legislature that nine-tenths are in favor of it. There is to be no restriction to a man's liberty, or to the use of his property for the good of the public.

Mr. Smith: I have no feeling against those men who are opposed to it, and I believe they are honest in their convictions. I was in the service of our country, fighting men who were the enemies of our flag, and I believe they were honest in their convictions, and I can shake hands with them. I just want to illustrate. A man by the name of Taylor wrote me in June, the height of the honey-flow on white clover, that there was something the matter with his bees. I went over and found 92 colonies out of 102 completely enveloped with foul brood. He was a poor man, and he used all his means to keep up his hives and keep up his bees, and he sat down and cried. He said: "My whole crop's gone and my bees are gone." I told him: "Don't be discouraged. We will save your bees, and it is early yet, and you can get a crop of honey." "Do you think you can do it?" he said. I stayed with him two days, and we didn't destroy the brood, and let it hatch, and after the brood hatched, I went over it again, and we melted up the combs. Today, there has no foul brood appeared in his apiary, and he had four thousand pounds of fine honey, 106 colonies in good condition. Another man had thirty-seven colonies in the height of the white clover season. I went over and transferred those bees, and he had in the neighborhood of three thousand pounds of honey, and his bees were saved. We don't want to destroy property. We want to save property. I have burnt very few colonies, and only at the request of the bee-keepers themselves, when the combs were so old and full of moth, and so badly diseased and rotted that

there was no chance of doing anything with them.

Mr. Whitney: I move the previous question.

The motion was seconded.

President York: It is a question of whether the debate shall cease. All in favor of the previous question will say aye.

The motion was carried.

President York: The motion is whether or not we shall strike out the word "unanimously." All in favor of striking out the word "unanimously" rise, and the Secretary will count.

Secretary Moore: Seventeen.

President York: All in favor of leaving the word "unanimously" in, rise.

Secretary Moore: Seven.

President York: The words will go out.

Mr. Baxter: I move that on the original motion, the vote be taken by rising.

President York: The motion before you is on the approval of the resolution presented by the Resolution Committee, as amended. All in favor of the resolution will rise.

Secretary Moore: Twenty-five.

President York: Those opposed will rise.

Secretary Moore: Five.

President York: The motion is carried.

An adjournment was then taken to 1:30 p. m.

SECOND DAY—Afternoon Session.

The convention met pursuant to adjournment with Pres. George W. York, in the chair.

Wintering Bees.

"What is the best method of wintering bees?"

Mr. Taylor: That probably has been asked by some one who lacks experience, and one of the answers would be to find out how bees were wintered in his neighborhood by those who were wintering them successfully. I doubt very much whether there is any man here who can say what is the one best method of wintering bees, because what may be best in one place may not be best in another.

Black Brood and Foul Brood.

"Is the same treatment necessary for black brood as foul brood?"

Mr. Taylor: I think the same treatment is effective.

President York: They use the same in Canada and New York State. I remember the subject was up at the National Convention at Detroit, and I think that was what they stated there.

Drones and Queenlessness.

"Is the presence of nice big drones in a hive at this time of the year an indication of queenlessness?"

Mr. Taylor: I should say, if there are nice big drones, the hive is very likely queenless. If they are small, it is a little more likely that they are queenless, although there are exceptions sometimes. A queenless colony will have drones at this time of the year; so, in general, if drones were found in a colony now, it would be strongly suspicious of queenlessness.

Wintering Bees in Northern Illinois.

"What is the best method for a beginner to winter his bees in this part of the country?"

President York: How do you winter yours, Mr. Wheeler?

Mr. Wheeler: I winter them in the cellar and keep the temperature as near forty-five degrees as possible, and dark—keep the temperature even. I put them in as late as I can and take them out as early as I can in the spring, when they begin flying regularly, and when there is no danger of their being injured by the cold winds and changes of temperature. There seems to be a time when you can tell by intuition when to get them out—the action of the bees, the temperature of the air and the birds singing give me an idea.

Mr. Horstmann: The question seems to be what is the best way for a beginner of winter bees. A beginner would not have very many colonies of bees. I would suggest that a beginner use an ordinary dry-goods box, take the bottom out of it, put it over the hive and fill it in with hay, and cover it so as to keep the water out; leave an entrance so that the bees can go in and out when they like. He should do that until he has experience; then a repository is better. But a beginner has not had experience, and would not

know whether the bees were wintering well or not, but under one of these dry-goods boxes he would be sure they would winter as well as they could winter.

Mr. Whitney: I would recommend the beginner to adopt the double-wall chaff hive. I have wintered them outdoors.

Mr. Kannenberg: I think for my part, or the beginner's part, if he has only a few colonies of bees, it would be well if he would make a box and put planers' shavings in it, and put it on the super on top of the hive, and have it so the bees can crawl from one of them to another, give them access to all the frames, and the heat and moisture will go into the cushion, and it will save a lot of going to work and carrying them in and out and back and forth. If he does that way, I think the bees will keep fine.

Mr. Kennicott: I will give you the way I have wintered bees, and I have had considerable success for a good many years. I put on supers, with a canvas or thin sheeting cloth on top of the frames, and fill in the super with dry leaves. Leaves are better than straw or chaff or anything of that kind, because they keep in the heat better and are warmer. The leaves will take off the moisture perfectly. Then I bank my hives with leaves from behind and over the top. I have wintered bees several years in that way perfectly. I didn't lose a colony last winter, not one, and I had pretty nearly thirty that I wintered.

Mr. Wheeler: What kind of leaves do you use?

Mr. Kennicott: Any kind.

Dr. Miller: I think we have a question here that will bear a vote. It will be of interest to know how many prefer outdoor wintering and how many prefer cellar-wintering.

President York: How many prefer outdoor wintering? (Thirteen.)

President York: How many indoor? (Seven.)

Mr. Taylor: Now, it will help us further if we can find out what the location is of those who are wintering bees outdoors, for instance, as far south as Mr. Dadant and Mr. Baxter, there will be no question, but when you come to this locality, there is a question, and it will be interesting if you can find out what proportion of

those who are, say, as far north as Chicago, or even twenty-five miles farther south, are wintering outdoors.

Mr. Kennicott: I live about eighteen miles northwest of here. I have had more or less to do with bees for the last fifty years, and we have rarely ever lost any bees when wintering outdoors on the stands that we give them. We set them down near the ground, probably six or eight inches above the ground, and my hives are twelve inches deep, and I find that the deeper the hive, the better you can winter the bees. There may be something in that. The cold does not affect bees at all, I think. I have wintered them inside two or three times, once in a cellar and twice in an outbuilding, and I have lost them by their coming out and losing their strength, losing a good deal of their vitality by going outside, and I have lost a good many bees that way, I presume; but I think that outdoors they will take care of themselves a great deal better, and get a chance to fly occasionally that they won't inside.

President York: There were twenty that voted. How many of those twenty who voted before, live within twenty miles south of Chicago or twenty miles north of Chicago, and winter bees outside? (Seven.)

President York: How many are further north than twenty miles who voted before to winter outside? (Three.)

Mr. Macklin: I winter both indoors and outdoors. I take the very heaviest colonies and pack them outdoors. I put in one cloth over the brood-frames, several thicknesses of loose paper over that, and then the cover over that, and then cover that with leaves. The lightest colonies I put indoors, in the cellar. I live one hundred and twenty-five miles due west of here, in the same temperature, or perhaps colder than here. The thermometer is lower with us than given in the Chicago papers. I have had better success with outdoor wintering than with those in the cellar, but that is hardly fair when I put the lighter ones in the cellar.

Mr. McClure: I work for B. Walker, who has some two hundred and twenty-five colonies of bees. We use a double brood chamber, then put on another story, then put a device over the frames, put a carpet over the device,

and then fill it with leaves; and out of two hundred and twenty-five colonies last winter, he only lost two—outdoor wintering, ten miles due west of Chicago.

Mr. Whitney: I think, two years ago, Mr. Abbott said if you had honey above a cluster of bees, you couldn't freeze them. I have never had any experience in wintering bees in single board hives, but I believe that if there was the right kind of cushion on top and plenty of honey over the bees, they would winter well in single-board hives outdoors. Mine have been wintered, of course, in double-walled hives, and I have had very good success.

Mr. Macklin: There is one thing I didn't say. When I take off the woolen cloth in the spring, I find it, in the majority of cases, moldy, which shows that it collects considerable moisture.

Mr. Horstmann: I have a very simple way of wintering bees outside which may be of benefit to a beginner. I have a screen cover—take any ordinary half-inch lumber and make a kind of a frame and put in a window-screen, have about half the top of the hive covered with that, then have a cushion such as they use on steam-pipes, covered with burlap, then have a ventilated cover to put on top of that, and there is no danger of the bees smothering in the hives, even if the entrance is closed up tight. I close the entrance up about half way and leave two or three inches open, and the bees can always get air through the cushion; and if you go out in cold weather and put your hands under that cushion, you will find it is very warm. I think that cushion will hold the heat and keep the bees much drier than if they were closed up otherwise, and always warm. You can put that felt on water-pipes in cold weather, and very seldom the water will freeze, and what is good for pipes is good for bees.

Mr. Taylor: Asbestos?

Mr. Horstmann: No, hair; a cushion the same as they use on steam pipes, and it is a good idea.

Bee-Keeping For Women.

"Is bee-keeping advisable work for women?"

President York: Miss Candler, what have you to say?

Miss Candler: It is for me, I think.

Mr. Taylor: That is, for some women.

President York: Miss Kennicott has had some experience. What have you to say?

Miss Kennicott: I think it is, if you are not afraid of them.

Mr. Moore: I want to call attention to several ladies who have had great success with bees. Mrs. Stowe kept about eighty colonies at Evanston. Mrs. Harrison of Peoria, and some others have made a great success of bee-culture.

Mr. Whitney: Miss Pickard of Wisconsin. What were the figures on her bees?

Mr. Moore: I think from one hundred colonies she produced 16,000 pounds in one season.

Miss Candler: I have three hundred colonies and have produced thirteen thousand pounds of honey this year.

Mr. Moore: Tell us about it, Miss Candler.

Miss Candler: I had to do it alone until school vacation, and then I had a little boy to help me.

President York: I am afraid you did not improve leap year, Miss Candler.

Miss Holmes is here; we ought to have her report on this. What have you to say on this question?

Miss Holmes: I have found it very profitable, but we are not so situated that we can devote our time to it and not be called off for other things in the height of the honey-flow.

President York: How many colonies have you?

Miss Holmes: Only nineteen.

President York: What is your crop this year?

Miss Holmes: About four hundred pounds; about as many as I can handle alone. I cannot come up to Miss Candler.

Mr. Whitney: Couldn't she find any man who was not afraid of bees to help her out?

President York: Perhaps she prefers to be her own hive-lifter, instead of having a man hive-lifter.

Mulberries For Feeding Bees.

"What about mulberries for feeding bees?"

Dr. Peiro: I know something about mulberries, but it is the white mulberry. Don't think any kind of mulberry will do, because it won't. The

white mulberry is seventy-three per cent sugar, saccharine substance, whereas the European mulberry has something like fifteen per cent, and another black mulberry has perhaps twenty-one. I have had some experience in feeding white mulberries to bees, and the more I use them, the better I like them. I think it is the coming food for bees in time of droughts, that will be money in the bee-keeper's pocket. I have some bees, and I feed them those mulberries during the time of fruition, from about the 15th of June to the 15th of August. The way I feed the mulberries is by putting them in a dish and mashing them up, because they can't get the honey or saccharine substance out of the mulberries as they are. You have to mash them up. I believe I know some one who has seen that done, and knows how they swarm over it just like a piece of comb honey. I attribute my success with my bees to the use of mulberries for food. I have just one colony this year. I got a hundred pounds of honey, and sometimes more—call it a hundred pounds—every year by encouraging the bees with the white mulberry. Any question I will be very glad to answer.

Mr. Whitney: Do you find that good honey to winter them on, or don't you know about it?

Dr. Peiro: Yes, sir; it is a very good honey for me to eat, I know that, and everybody who uses it likes it very much.

Mr. Whitney: Most fruit juices are not considered good to winter bees on.

Mr. Kennicott: What mulberry is that?

Dr. Peiro: The white mulberry.

Mr. Kennicott: Is it a native of this country?

Dr. Peiro: It is a native of Persia, I think. It is of the fig family. It is as hardy as an oak, and it needs only to be known about for people to take hold of it and plant it. It makes a beautiful shade-tree. It is as hardy as any tree we have in the country. I am told the wood itself is excellent for posts.

Mr. Kennicott: We have a mulberry here that is a native that isn't exactly white. It is a kind of a pink and yellow.

Dr. Peiro: That mulberry has probably been hybridized with the black, and eventually it gets a deeper color.

Mr. Kennicott: It has a very sweet berry and grows very large. I have seen the trees more than two feet through. It is a native of this State. They were never planted here, but they grow wild in the Desplaines timber here.

Dr. Miller: Are we to understand that this one hundred pounds of honey was mulberry honey?

Dr. Peiro: Not all of it, but a great deal of it was.

Mr. Holbrook: It costs money to pick the berries.

Top Covering Over Hive.

"How thick a covering on top is necessary to keep in the heat of the hive?"

Mr. Kennicott: An ordinary super filled with leaves is sufficient.

Dr. Peiro: Let me say one thing in regard to that very point. I keep my bees outdoors all the time. The way I work it is to take a large box and pad it in with all kinds of paper, newspaper or anything else, and then I work that over my hive, and it goes down to the bottom of the hive and projects out enough so as to protect the entrance and not let the snow get in there. That answers all my purpose.

President York: No covering over the top of the bees?

Dr. Peiro: Just this box I spoke of being padded.

Mr. Brubaker: Is there a danger of getting too much packing around the bees outside for winter?

Mr. Jones: Not in our part of the country, eighty miles north of here. In a very warm winter, they ought perhaps to have a little larger entrance. I never found there was any trouble in getting too much—not less than six inches of packing, I would say.

Comb Honey on Hand.

"What amount or per cent of the crop of comb honey is still on hand among the bee men here?"

Mr. Macklin: I have not had any for six weeks.

Mr. Kennicott: I have about one hundred pounds on hand, white clover honey mostly.

President York: There might be a chance to sell it if we knew who had it.

Mr. Kennicott: I have plenty of customers at home.

White Clover Seed.

"Will white clover seed sprouted after November 10 survive the winter?"

Mr. Kennicott: Not without protection.

Cellar For Comb Honey.

"Would a basement cellar 20 by 40 with active furnace in one end be a good place to winter comb honey, and in what part should it be placed?"

Mr. Kannenberg: Yes. I say, place it as near the furnace as you can, not to have too much dust around it.

Mr. Kennicott: And without too much dampness.

Mr. Kannenberg: There won't be any dampness near the furnace.

Mr. Whitney: If the basement is dry and warm, I don't know why it would not be as safe as in an upper room. It seems to me that it would be all right.

Mr. Moore: I think that would be a very ideal place to winter comb honey. I would like a thermometer, and would put it in a place that registered eighty degrees as near as possible. I know some put paper over it, and use tacks to hold it down, as there might be coal dust and other sorts of dirt that would perhaps ruin it, so that would be a good idea.

Mr. McClure: Which is considered the best honey, from Wisconsin or further south as far as St. Louis—white clover honey?

President York: Which is considered the best, the Northern or the Southern honey? Mr. Baldrige, what is your experience? You have had honey from all over the country.

Mr. Baldrige: I should think the white clover in Southern Illinois would produce as good honey as in the northern part. I don't know why it should not.

Getting New Members.

"How can we get two hundred beekeepers out of the one hundred thousand near Chicago to these meetings?"

Mr. Kannenberg: Draft them, like men in war time!

Mr. Whitney: I would like to ask if there are a hundred thousand beekeepers within the region of Chicago.

President York: The census of Illinois gives something like thirty-five

thousand in this State; so you take all the States surrounding Chicago, there ought to be a hundred thousand.

Mr. Whitney: Yes, if you take the United States. I supposed that had reference to the immediate vicinity of Chicago.

President York: I think it means the States within a radius of two or three hundred miles of Chicago.

Mr. Whitney: I think we would have to draft them if we wanted to get them from Ohio and Pennsylvania.

President York: The question asked for only two hundred.

Mr. Whitney: It would be a good thing if we could get them.

President York: I think the highest attendance we have ever had at the Chicago-Northwestern convention was one hundred and fifty.

Mr. Whitney: Right here, if I may be permitted to occupy the stand, it seems to me that if each one of us that comes to this association would use a little effort and a little persuasion, pleasantly, with the bee-keepers, we can induce some one, and perhaps two or more, to join. I am certain that I can. I believe any other member can do the same, and we can double the attendance next year. I want to ask, before we close, if an individual should join any time between now and, say, the first of January, would he become a member of the State Association?

President York: I should say, yes.

Mr. Whitney: And would be counted as of that association to influence the Legislature. It seems to me that we could get an additional number to join the association if we would get to work. I am going to go for three or four within the next few days that I know will join if they can have the privilege of belonging to the State Association, as well as the National.

President York: All three for the dollar. We would like to have them give \$1.25 if they will, but the twenty-five is not compulsory. The Legislature meets about the 10th of January, so that if the names of any new members are sent in to the Secretary before that time, they would become members of all three, and in time to help on the legislative work.

Mr. Moore: In this connection, I might state the executive committee

sent out, two years ago, two thousand notices by mail to those who would naturally come to Chicago to see the fat-stock show, or to trade. It cost us \$35.00, including postage, and we got in thirty-one or two dollars in money, and no doubt got some increased attendance.

Best Comb Honey Hive.

"What is considered the best hive for comb honey; if there is a preference?"

Mr. Horstmann: I would consider the eight-frame hive the best for comb honey. My reason is the same as Dr. Miller's, because you can build up your colony strong by using two hive-bodies until the flow begins, then take off one of the hive bodies and put on the super. I think you can get more and better honey from the eight-frame hive than you can from a larger or a smaller hive.

Mr. Moore: Do you find that there is a tendency to swarm when you have a large number of bees in the super? Would it be better to put the super on before the honey-flow began, and prevent the liability of swarming out?

Mr. Horstmann: I find the best way is to have a few empty combs in the section. You always have some in the fall that are not full. I usually extract the honey from the unfilled sections, put them in the first supers, and the bees will get to work right away. When that super is half full of honey, I will raise that up and put another over the brood-nest, and by the time the honey is almost capped, I will raise it up and put another super on, and the danger of swarming will be very small. I have not had a swarm in my apiary for three years.

Mr. Moore: Would it pay to keep a few dozen or a few hundred bait-sections and have them perfectly empty of honey, and put from one to five in the middle of each super as bait?

Mr. Horstmann: I usually put them around the edge of the super. Almost every bee-keeper will have them in the fall. I put in a frame that holds about eight or ten sections, and I put them in the extractor, and then I can set the empty sections in any hive-body and give the bees a chance to clean them out clean. I usually have a hundred or a hundred and fifty of them, and find them a great advantage

—don't need any honey there at all; just having the empty cells will attract the bees and reduce swarming. I believe the bees get a swarming fever like a hen gets a sitting fever, and if you can prevent them from getting the swarming fever you are all right. If you use an eight-frame hive they must have closer attention than with a larger hive. By having a large force of bees from two hive-bodies, sixteen frames, you will have them go up in the super in a great rush, and your comb honey will be that much nicer. The comb honey that I got here yesterday, I don't think any one would care to see nicer honey than that, and that was in an eight-frame hive because it was in an eight-frame super. So it is evident that the eight-frame hive is A No. 1 for comb honey. If it was not, Dr. Miller would not use it. I have great confidence in Dr. Miller's bee-keeping, although he will not come out straight and say the eight-frame or the ten-frame hive is the better.

Mr. Moore: I think that these gentlemen, when they go before the bee-keepers and say an eight-frame hive is the best for comb honey, ought to do as we did at school; they ought to take the eight-frame hive and put it to the second power. They mean sixteen frame, because it is the eight-frame hive raised to the second power.

Mr. Horstmann: I don't see how the Secretary can call that a sixteen-frame hive. I have them sometimes piled up ten stories high, but it is still an eight or a ten-frame hive. You have got to call it that size. We simply use that double colony for a while, then we will take away that extra hive-body in the honey-flow, and we will cap it over quickly and get it off the hive nice and clean. It is an eight-frame hive if you use an eight-frame hive-body. There is no such a thing as a sixteen-frame hive. I have a twenty-seven frame hive. There are three divisions in it; I can call that a twenty-seven frame hive. It is nothing else but a twenty-seven frame hive. But if I use a five, six, eight or ten frame, you have got to call it that hive.

Mr. Macklin: I would like to ask if the queen goes up in the body above.

Mr. Horstmann: She will go, but there is such a small amount, it does not amount to anything. If you use full sheets of foundation, the chances are that she will not go up. But if they do put pollen in a couple of sec-

tions, throw them out. The idea is to get nice, clean comb honey.

Mr. Moore: Do the bees use both of those eight-frame hives as brood-chambers?

Mr. Wilcox: Perhaps he has made it plain enough. We want to consider that the two-story eight-frame hive is still an eight-frame hive, two stories high, to be used in that condition until it is time to put the sections on, which will be after white clover shows its bloom and before the bees make preparations for swarming. It is necessary that it should be a week before, otherwise it will not discourage swarming. When you put that on, remove all the brood from the second story to the first, and remove the combs that have no brood in them or reserve them; then you put on your super at the proper time, when your apiary is in the best possible condition for comb honey. The story below it is filled with brood. They will naturally store it as near as they can above, and by having that super on before the principal honey-flow begins, they make preparations to fill it, instead of making preparations to swarm. It tends to discourage swarming.

Mr. Horstmann: There is one thing I didn't mention—the extra brood I have in those two hive-bodies. I have brood enough to give to other colonies to help them out. It is very seldom I am able to get all the brood in one hive-body, but I will have the fullest hive-body below with all the bees.

Mr. Kannenberg: Has it ever happened that your bees filled the second story from the lower story, and left no brood at all in the lower story?

Mr. Horstmann: That happens where I am working for extracted honey.

Mr. Kannenberg: The queen left the lower story, and just put brood in the top story, and left nothing in the lower story.

Mr. Horstmann: I would advise you to get a better queen. I would take the head right off a queen that would do that, if she didn't know enough to stay below.

Frame Bottom-Bars.

"Should bottom-bars be made of light or heavy lumber?"

Mr. Macklin: Heavy.

President York: What is considered the best bottom-board?

Mr. Kannenberg: I think a good, heavy bottom-board is the best of anything. I have very thin, $\frac{3}{8}$ -inch bottom-boards, and I would not use them any more. They warp and come apart. If you have a bottom-board $\frac{7}{8}$, I think that is the best bottom-board.

Best Hive-Stand.

"What is the best hive-stand, and how is it made?"

Mr. Kannenberg: I think the best hive-stand is of cement. It will last forever; it doesn't rot the hive, and it is always dry.

Mr. Wilcox: It is too heavy to carry into the cellar.

Mr. Kennicott: A 2x6-inch wood, set up edgewise, is about as good a hive-stand as you can get.

Mr. Wilcox: The hive-stand I am using is made seven inches high, forty inches in length, and as wide as the hive is long, about twenty inches, and two hives on a stand; stands two or two and a half feet apart. I prefer those stands, for the reason that the hives are in pairs, and they stand level, they settle level, and for the further reason that I can pick them up and move them when I wish to run the lawn mower, or move them to a new piece of ground once in a while.

President York: What sort of a lighting board leads up to the entrance?

Mr. Wilcox: The bottom-board of the hive projects out in front, and sitting on this box, they do not leave. The bottom-board sits on the stand, and the bee strikes under and hits the stand, and she can climb up into the hive.

Mr. Whitney: But suppose one practices clipping a queen's wings. It seems to me the stand advertised in the catalogues, about a two by six piece of timber, with an alighting board slanting to the ground, would be better than anything else, and cheap, as well.

Mr. Bodenschatz: The best thing I can use is a box from twelve to twenty inches wide; about twenty inches long, and about two feet high. I level off the ground and set the box in, and use alighting boards from one foot long to about sixteen inches wide, or whatever hive I use, and have the bees climb up. The boxes are as cheap as anything you can get hold of.

Mr. Horstmann: I am making my own hive-stands now. I have used two by four, two by six, and the regular hive-stands. I am making flags now of cement, ordinary torpedo sand and cement, and I think a barrel of cement will make about eight of those slabs. I make them two feet and eight inches long, and eighteen inches wide. I will be able to put that slab $1\frac{3}{4}$ down. I make a slab and let it dry about two days. I expect to make them on an average of one a day, and I want about fifty ready by next spring. I will be able to put them on the ground anywhere. The flags will be long enough to set the hive on. I have them on the slant, so that the water will run right off the flag, and I think it is going to be all right. I will report on it next year. You can use those flags to make sidewalks or anything else, if you get tired of keeping bees. You can lay them out and use them for sidewalks any time, if you make them strong enough. I think they will have a tendency to keep the ants away some, too.

President York: How expensive are they?

Mr. Horstmann: They will figure out about ten cents apiece, making them myself. Anybody can make a frame, an ordinary door, and take a two by four and make a frame, and after the cement gets dry you can take the frame off and set the stones aside. I have two, and I have taken them out of the frames without any trouble. I believe they are the best stands. I have read about them before. Set them down on the ground. If the ants bother you, lift the flag and put kerosene or something under it. I will be able to report on them next year, after I have had a year's experience. I don't like to be too sure, unless I have some experience. I believe it is a benefit to all of us to hear some one give their experience—not say something because they think it is so, but give us the reason why it is so. The hive question came up here. Some of you claim the ten-frame hives are the best, and others that the eight-frame hives are the best. Mr. Moore is a great ten-frame advocate. I believe he likes them because they look well. I want to know the reason for everything. That is what we are here for. If there is a good hive-stand, we want to adopt it and use it generally.

Swarming.

"Which is the better, natural swarming or shaken swarms?"

Mr. Bodenschatz: I think the natural swarm is the better. If you clip the queens' wings, you are sure they cannot go. You get better selling queens, stronger and more profitable.

Mr. Whitney: As Dr. Miller would say if he were here, this is a big question. I have had a little experience in artificial swarming, but if I want to succeed in making a colony of bees and place them out on a stand immediately, I will wait until the colony swarms, and when they come back I divide them, and I can put them anywhere I please, and they will stay. A year ago I had a very strong colony, two stories and double walls. There were nineteen frames in the hive, and the upper story was as full of brood as the lower story, all from one queen. I went to work and made artificial swarms from that colony after they had swarmed. I watched them come back, and I went to work and divided that colony and made four colonies, and put three of them to one side—left the old queen on the stand, and they went right to work just as though they had naturally swarmed. On two of them I put supers of frames for extracted honey, and on one of them a section case, and I put three section cases on the old colony, and I had them nearly all filled. That was artificial swarming after they had swarmed, and I sold those colonies for \$10.00 apiece.

Best Bees for Comb Honey.

"What are the best strains of bees for comb honey?"

Mr. Bodenschatz: I think the best strain for capping is the black bee, what they call the German black bee; but they are harder to handle, and they will not go so far to carry the honey as the Italians will. They are as good a strain as any, and will do the same in capping as the black bees.

Mr. Wilcox: The question is, which are the best strains. It does not inquire concerning races. We will first choose the race of bees from some good breed, probably the Italians. When we have chosen the race, then we may choose from that race the best strains to breed from. Those which have previously done the best give the best results. We notice that we are

always advised to breed from pure stock, but we should always select the best specimens of that stock, of that race and strain. The individual selection is quite as important as the race or strain, and the older countries are going back more and more to the old-fashioned plan of individual selection, and in our bee-keeping the same rule will apply. Those bees which have given the best results are the best to breed from. But, you understand, only pure-blooded stock can reproduce itself. If it is not pure-blooded stock of some kind, you don't know what you will get from the breed.

Mr. Whitney: I should like to ask how many there are here who have attempted to breed up any race of bees to make them what we term thoroughbreds, if there are any, or if they have done it sort of haphazard.

President York: Raise your hands, if you have tried it. (Four.)

(RECESS.)

Record of Hive-Manipulation.

"How can one keep a convenient record of hive-manipulation?"

President York: Dr. Miller has a book in which he keeps a record of practically everything, but I don't think he puts down all the manipulations of the hive.

Mr. Whitney: I have always kept a record in a little book. At the top of each page is a number corresponding with the number of the hive that I have a record of, and everything that happens that I think is important with that colony, I note down. That is, in short, all I have to say about it.

Mr. Horstmann: I keep a record of my queens in a little book. I have the hives all numbered, and the number of the hive corresponds with the number of the page in the book, and I have slips keeping count of the amount and kind of honey that I take off. If I take off a super of honey, I fill out one of these slips with the number of the hive and the date. When I get ready to extract, I weigh that super before I extract. I extract the honey, and put down the amount of honey I get from that super, and put that slip on file. At the end of the season, I have a slip for every bit that I have taken off. One eight-frame colony gave me two hundred and twenty-

seven pounds of extracted honey. The only way I knew that was by this record. I have had other bee-keepers tell me their colonies do so well, but they had no record to show me. I have all these slips from this year on file now, and one advantage of that is that I will know just what queen to breed from next year. In this one particular hive the bees were very generous, good workers, and I don't know of any colony better to produce from than that one, and that is the one I will produce from next year if I am successful in carrying the queen through the winter.

Mr. Moore: Some of the members would like to know how many colonies you keep. Do you keep bees for pleasure or for revenue?

Mr. Horstmann: Both. I have to attend to my family, and so I have to work for the shillings some times. I have about forty colonies. I some times have eighty-four. Some times I sell some in the spring, but I did not produce very much this year. I keep them for both pleasure and revenue. There is nothing suits me better than keeping bees, and going out and working with the bees after I get through my work, or at the noon hour. When I am working regularly, I have from 12:30 to 3:25 in the middle of the day to myself. When I get home and with the bees, it is as good as going to the theater for me. I don't know of anything that suits me better than bees. Even in my neighborhood, people ask me, what would you do if the people would say you must quit keeping bees here? I said I would have to go out of the neighborhood. I could not do without my bees.

Best Bees to Keep.

"Which are considered the best bees to keep, everything considered?"

President York: How many think the Italian? Raise your hands. (Thirteen.) How many think any other kind, and what?

Mr. Stanley: My experience has been that I have been in favor of the Italians, until this last year or so, I have tried others, and I think I have had better results from others. I like the Caucasians for extracted honey. They go into sections more readily and stick to work, and I am not bothered with so much swarming. I prefer the Caucasians.

Mr. Moore: Won't you go a little further, and tell us some of the characteristics of the Caucasians?

Mr. Stanley: Their good qualities are, that I can get them started in sections; they build up faster in the spring, and are better bees to handle than the average of Italians; they keep the honey better; I am not bothered as much with swarming, and they do not put pollen in the sections any more or as much as other bees; they do, probably, gather a little more. That is why I like them better.

Mr. Moore: Do they sting you and run around and fall off the combs?

Mr. Stanley: No; I would not keep them if they stung me.

Mr. Whitney: I have had a little experience with the Caucasians. I think Mr. York sent me a queen two years ago, and I introduced her to an Italian colony, and in time I had a Caucasian colony of bees. They did not do anything that year. Towards fall they just chucked their hive as full of propolis as they could. They didn't quite close the entrance. The next year I nursed them along, and built them up as well as I could. They are capital bees to handle. I handled them many times without smoke or without a veil, and my hands bare—I never use gloves—and I didn't get a sting; not one in all the two years I had them—a lady came along and saw me handle them. They were rather weak. I was afraid they were going to mix with my Italians. I saw they were producing drones very rapidly, and that causes me to see that the ordinary foundation, such as we use for worker-comb, is just about the kind of foundation that the Caucasian bee, the queen, takes to lay drones in. They are a small bee and make a small section. I found they were producing drones pretty rapidly. The lady who saw me handle them asked me what I would take for that colony of bees. I said: "You can have them for \$10.00." She said: "All right," and she took them. They were in the neighborhood, a mile or two away, and that summer they swarmed "to beat the band." They swarmed themselves almost to death. They saved two swarms of them, I think. A young lady told me that some person on the farm said that their man was out and saw a swarm of black bees, and told them to come up and hive them. They

went up and saw them, and said: "Those are black bees; we don't want them." I was up afterwards, looking over the colony for them, and looking over the brood-chamber, and I saw half a dozen bee-cells that had been nicely capped. I thought a number of swarms, deducting those they had saved, had gone off, and I said: "That swarm of bees you saw up there was your Caucasians," and showed them their queen-cells, and convinced them they had lost two or three swarms of bees. It is the experience of those who have handled them most, that they are great swarmers, and great to put propolis into their hives in the fall, and, of course, they breed drones. I think perhaps they would swarm less if the foundation base was a trifle smaller than it is; perhaps that would change that condition.

Mr. Moore: Will Mr. Stanley tell us how he can tell a Caucasian from an Italian or German bee by inspection?

Mr. Stanley: I cannot tell. I have to watch their movements and the way they work, and then I am not sure.

Mr. Moore: They look like an Italian bee?

Mr. Stanley: No, sir; they don't. The queens are a little slimmer. The bees are smaller and a little more restless.

Mr. Moore: Yellow bands?

Mr. Stanley: Dark ivories, as near as I can call them—between a hybrid and a black, I should think.

Mr. Whitney: Those that I had, the segments were very black, with a very narrow white band at the joint of the segments of the abdomen, and the queen looked like an enlarged, as nearly as I could describe it, mud-wasp, more like that than like an Italian queen; quite dark, but she had some earth-colored bands across her; but very slim, and long-legged apparently, because her slim body made her look so. It is very easy to tell this strain that I had from the Italians or from the hybrids, but a little difficult to tell them from the regular black bees.

Mr. Kannenberg: I want to ask Mr. Stanley if they were hybrids or regular Caucasians.

Mr. Stanley: I had some of both, I think.

Prices of Bees.

"If an undesirable colony of bees is worth \$10.00, how much is a good colony worth?"

Mr. Whitney: There ought to be a standard price. If somebody comes to me and wants to buy a colony of bees and a double-walled hive, I want \$10.00 for it, whether it is black, Caucasian or hybrid. I want \$10.00 for a colony of bees; and I wish that every member of this association would fix that sort of a price on their bees and stick to it. Perhaps they would not sell very many, but they would get somewhere near what they are worth.

President York: What is a good colony worth if you got near what that was worth?

Mr. Whitney: I think I would have given \$10.00 for that colony of bees to know something about it.

Mr. Moore: I am another \$10.00 man, and have had a \$10.00 price on bees for the last ten years. If I can raise \$10.00 worth of honey, are they not worth that? I have to deliver that colony and give good advice for the next three or four years, telling them about it, so I think I give \$10.00 worth all right.

Mr. Whitney: I don't deliver them.

Mr. Horstmann: My prices run from \$6.00 to \$150.00.

Size of Bees.

"How do the Italians, Carniolans and Caucasians compare in size?"

President York: There is a difference in Italians, as there are some golden ones and different kinds—there is pretty nearly as much difference as in other strains. You will find quite a difference in all of them.

Mr. Whitney: There is quite a difference in the same strain at different seasons of the year. Bees some times come out of winter quarters in the spring poor like the cattle, and need feeding. You can fatten them up as you can stock. The Italian bees then—what is known as the three-banded Italian—are about as large as any bee that we find; larger than the blacks. The Carniolans I don't know so much about.

Best Hive-Cover.

"What make of hive-cover is the best for this locality, and describe the best hive-cover."

Mr. Kannenberg: I think the "Excelsior" hive-cover is about as good a hive-cover as there is made.

Mr. Arnd: I think there is no cover on the market as fine as the "Colorado" cover, with the inner cover; it is the heaviest, best made cover in the market today.

Mr. Moore: I want to ask more about this cover question. I would like to get somebody's experience on metal covers. My experience with the wood covers is bad, and I find the action of the rain and sunshine eventually pulls them apart, and that makes a place for the rain to get in. Isn't it better to have a metal cover, or tin over the top, if you please?

Mr. Arnd: There is a metal cover called the "Acme." It is flat, with heavy sides, and it has tin over the top. We have now a cover that we make specially to order with galvanized iron. It also has an inner cover, which gives a narrow space like the "Colorado" cover. It is a warm cover in winter and cool in summer. I don't think either that cover or the "Acme" cover will crack.

Mr. Moore: Have you used them on your hives?

Mr. Arnd: I have used them.

Mr. Wilcox: I have some that have been used for thirty years, that have been made of lumber and well covered with tin, and they are in good condition yet, so that tin is the most economical.

Mr. Moore: What color do you paint them?

Mr. Wilcox: Ours are painted rather a light color, nearly white.

Mr. Moore: They are much too cold in the spring for the best results.

Mr. Wilcox: I don't know as that affects the temperature of the bees very much if you have any packing on top under the cover. The cover is made two inches deep, and there is packing underneath, consequently the sun does not affect them under that. I advocate dark-colored hives for spring use, and keep them all summer.

Mr. Kannenberg: I have handled many covers, and tried them. I have had covers with air spaces in them, with tin on top, such as Mr. Arnd spoke of, and the covers were made of $\frac{3}{8}$ -inch thickness, and I would not have those covers if anybody would

give them to me. They will warp. In the spring, you can put your finger under the hive, and the bees can crawl out all around. I would rather have a plain board cover of good thickness.

Mr. Whitney: I bought thirty or forty colonies of bees when I went up to Lake Geneva, of a gentleman who had an old hive, and he had a cover that was made of zinc, that is, the outside was zinc. How long he had them, I don't know. They are everlasting. There is no rust whatever; nothing to be done to them. Whether they cost more than tin, I don't know. I suppose they do. But he must have had them at least twenty years; just as good, so far the zinc cover was concerned, as when they were first made; and when I sold my bees, they were just as good as they ever had been. For that kind of a hive, I concluded that they were the very best cover to be used. There was no necessity for painting at all. The cover that I use on a double-wall hive is entirely different. It is like the gable of the roof to a house, and I never had any trouble with that cover at all.

Mr. Arnd: The "Colorado" and "Acme" covers I spoke of are made out of good, heavy material. This "Colorado" cover will weigh twice as much almost, with the inner cover, as the "Excelsior" cover. It is good, heavy lumber, and people who have used them for years would not have anything else.

Mr. Horstmann: I would say that I use covers of my own make. I have a cover that telescopes about two inches over the hive-body, and the ridge-board of that cover is loose—it is not nailed on at all. It is made with a groove, so that when the ridge-board is on top of the gable cover it prevents the rain from coming in, and the hive is always ventilated by using the cover. When it is necessary, I use a small, thin cover right over the bees. In the spring I use this hair felt cover that I use in the winter time, putting it on the cover so that it will keep the bees warm. It always acts as a good shade-board. There is a space between the thin cover and the main cover at all times, and I have never had a colony of bees overheated with that cover, and almost everybody who has seen that cover has used it themselves. Anybody can have the privilege of using

that cover. There is no patent on it. I had about one hundred and twenty-five of them made several years ago, and they are just as good now as the day I got them. Mr. Duff uses them also. I made some of them. I think they are the best covers, not because I made them. I would be glad to show the cover, and if anybody likes them, let them go ahead and make them.

Keeping Empty Extracting Combs.

"How should empty extracting combs be kept when not in use?"

Mr. Wilcox: I don't know how they should be kept. I have kept them a great many years, and am keeping them now. The most important thing is to keep them away from the mice. But you have to look out for the moths also. To prevent that, I keep them on the bees a little later in the fall than is really necessary, and then, taking them off at the approach of cold weather, no more moths cut them. After I had completed my extracting, which I finished only about two weeks ago, I left the extracting combs outside, and let the bees clean them out. Then I put them away, and I have to place poison and traps around to keep the mice and rats away. They will keep free from moths if you will place them in a rack in a light place, spaced an inch apart. A great many bee-keepers keep them, and they are perfectly safe. It is well to have them thoroughly cleaned up by the bees in the fall, otherwise there will be granulated honey in them in the spring. I do not care how cold it is, the freezing will do no harm.

Comb or Extracted Honey.

"Which is considered the most profitable to produce, comb or extracted honey?"

President York: How many think comb is? Raise your hands. (Eight.) How many think extracted is? (Six.)

Mr. Wilcox: I was going to say, I don't vote either side, because that doesn't answer the question. Extracted is the more profitable under certain circumstances. Comb is the more profitable under other circumstances. What they wish to know is when and where comb is the most profitable, and when and where extracted. If I were in a locality where the honey flow, when there was a

honey flow, was a good one, and where white clover or basswood was plentiful, I should certainly produce comb honey, and advise every one else to do so. But if you are in a locality where the honey is principally of a dark color, I would produce extracted honey, because the dark extracted honey sells for only one cent less than the light extracted in all wholesale markets; while there is about a difference of four cents in comb honey between the dark and the white, and where there is much dark honey, you can scarcely make a success of producing the best white honey, for the reason that your supers and the honey inside of your hives is more or less mixed with dark honey, and if the bees do not consume every pound of it in rearing brood in the spring, some of it will find its way into the supers to shade the color of your honey. Therefore, if your honey is pretty dark, produce extracted honey. If it is pretty nearly or all white, produce it in the combs.

Mr. Whitney: Isn't it a fact that from fifty to a hundred per cent more honey can be produced in extracted form than in the comb, and although extracted honey brings a little less price, more money really can be realized, even though it is white clover honey?

Mr. Wilcox: I am of the opinion that I can produce and market two pounds of extracted honey as cheaply as one of comb. The average yield depends upon the season. In a poor season, you will get more than two pounds of extracted to one of comb. In an extra-good season the difference will not be so much, perhaps forty to fifty per cent more extracted honey than comb. It depends upon the locality and the season.

Moths and Bees.

"Do moths bother the bees that stand in the shade more than in the open?"

Mr. Whitney: My strain of bees are not bothered with moth at all, either in the shade or open. They are three-banded Italians, and will take care of moth very quickly. I have never seen any difference between the shade and the open.

Loss of Young Queens.

"What causes loss of young queens before mating?"

Mr. Stanley: There might be a number of causes; might be a storm come up; might have your hives too close. That is a hard question to answer.

Mr. Wilcox: That doesn't answer the question. This is before mating; not at the time of mating.

Mr. Horstmann: How does anybody know they are lost before they leave the hive? They have got to leave the hive to be lost.

Mr. Stanley: Unless you handle them so much that you kill them in handling the combs.

Mr. Horstmann: Whoever wrote that question might give it to us a little plainer.

Miss Candler: I asked the question. I have been trying to rear queens and the queens were lost. They were virgin queens, about twenty-nine or so, and they were all right a few days before in the hive.

Mr. Horstmann: How long after the queens were hatched until you noticed that they were lost?

Miss Candler: Just a few days.

Mr. Wilcox: Is eight a few?

Miss Candler: All the way from three days to two weeks that I could not find them.

Mr. Horstmann: In that case I think they were lost in the air. The young queens go out sometimes when they are from three to four days old, and of course a young queen is more clumsy than an ordinary bee, and they are more apt to be picked up by birds. Sometimes they get lost by entering the wrong hive, but they are mostly lost, I think, by birds picking them up in the air.

Mr. Whitney: One yeear I lost five, and we had a pair of kingbirds that had a nest near the apiary, and I charged it to those kingbirds. I don't know whether they were guilty or not, but I borrowed a shotgun and killed them both, and after that I didn't lose any more young queens.

Mr. Moore: Isn't it a fact that if you have nuclei for queen-rearing arranged in a row so that they look alike there is danger of their being lost? Isn't it important to set them around in irregular form for the guidance of the queen returning?

Mr. Horstmann: I believe almost everyone rearing queens does that. I always try to change mine. I never

have two of them looking alike if I can help it. If you set little nuclei boxes right close together I think most of them would be lost. In one hive I have four entrances, one at each corner of the hive, and in that case I believe they are all right. Take these boxes and have them around the entrance on each side, and there isn't much danger of the queens getting lost in that hive, but if you had them in a row, side by side, they would naturally get mixed up.

Mr. Wilcox: I am of the opinion that the greater portion of them are lost by birds. One year when I had a great many bees and much swarming, I lost a number of bees, and I noticed a large number of kingbirds around the apiary. I shot twenty of them and frightened the others away, and after that I lost only one or two in the season, so the kingbirds were getting the young queens and drones.

Mr. Logsdon: I hate to have the kingbirds killed. A young queen is not much like a drone. She is more like the worker bee. I killed a number of kingbirds and I dissected them, and never saw anything but a drone—you cannot find any other bee. I even shot them up to last season, and I never will kill another kingbird. They are our protection; they do us good; they are our companions in life, and we ought not to destroy them. I have killed them so many times, and dissected them. They feed on the drones only, and we always have too many of them; and as to their picking up a virgin queen—if you have ever noticed how rapid and strong the virgin queens are in their flight; a virgin queen is very easily excited, and will run over the frames and fly, and in handling them I have lost, or would have lost, virgin queens, finding them crawling on my coat sleeve or starting to fly. There are different ways of losing them. They are very active and excitable. You will look in your hive a dozen times before you find her, she is so quick. In making these manipulations, being so quick, she gets excited, and she often takes wing, and if you close the hive while she is taking wing you may often lose her that way.

Mr. Wilcox: I am glad to hear the opinion, even though it differs from mine. One or the other of us is certainly mistaken. I hope we may some time be able to agree.

Mr. Whitney: At Kankakee one

time, when I had my apiary there between two rows of trees, the bees were inclined to go out in a regular stream, and there were kingbirds there, and occasionally they would go. I watched those birds very closely, and I feel certain that they caught something besides drones. While I had my bees there, on one day a kingbird caught over a dozen inside of two and a half minutes. I watched and saw him do it. Pretty soon he made a dive for those bees going out in a swarm, and they were too many for him—they stung him. He flew away and lit on a post, and shook his head and fluttered about, and that was the last I ever saw of that kingbird in that yard. I am certain he was after bees, and not drones, at that time.

Mr. Logsdon: Please may I ask what time of the day this was?

Mr. Whitney: Some time in the middle of the day.

Mr. Logsdon: About the time the drones were flying?

Mr. Whitney: I can't remember of drones flying. I have heard it said that they caught nothing but drones, but I am quite certain that they catch bees. It has been told that they simply suck the juices of the bee and spit the bee out, but you could not find the bee in their crop. I have read accounts of their doing that, and that has been given as the reason you could not find them in the crop of the bird. I don't know whether it is true or not, but I will not kill any more. After I had shot those kingbirds, I picked up one of them as it came from the tree and fluttered to my feet and died there. I picked it up and said, "This is the last bird of any kind I will ever shoot or kill; if they kill any number of bees, I won't kill another kingbird, or any other bird," and I have not since, and I never will.

Mr. Wilcox: I was going to say, the point he made was that he could not find them in the crop. You examined the crop and found no bee?

Mr. Logsdon: I examined the crop and found nothing.

Mr. Wilcox: Did you find anything else?

Mr. Logsdon: A little cheese or something of that kind.

Mr. Wilcox: What I wanted to say is that a kingbird has no crop. They only have a place where the crop is.

The food goes direct from the mouth to the gizzard.

Mr. Logsdon: I don't care anything about the particular designation of the place where we find the drones in a kingbird, whether it is in the crop or gizzard, or in a portion of the wind-pipe. It makes no difference. The point is that I don't wish to see the kingbirds destroyed. I have watched them carefully. The kingbirds never come to my apiary until the drone season, and never until from noon until perhaps three o'clock, which we know is when the drones are flying. Again, as I told you before, I have dissected them, and have found the drones internally. I don't know that it is necessary for me to be a physiologist or an anatomist; if I can find a drone on the inside of a kingbird, that ought to be sufficient to anyone, either pro or con. I have killed them, but, like my friend, I will never kill another one. They are a brave little bird, and I don't know of any other animal in nature that can teach us more the principles of bravery and industry and self-protection than a kingbird, and they are here and do us good, the same as all birds. I have never lost a queen through the influence of a kingbird, so far as I know—a virgin queen, now, mark you—if it was a fertile queen flying away with a swarm, sometimes they will; but for a virgin queen, just dismiss that from your minds. I will guarantee the kingbirds don't eat them.

Mr. Barkemeier: Is the kingbird the same as the bee martin? My bees swarm about ten o'clock. The kingbird and bee martin will come and peck at the bee-house in the morning, and my brother shot, maybe, ten, and they got off with ten or twelve bees.

Mr. Logsdon: Was it a first or second swarm?

Mr. Barkemeier: The first swarm in the morning, ten o'clock.

Mr. Logsdon: Everyone who has bees can see them flying in the afternoon by four or five o'clock—twelve o'clock you can see them. They eat only drones.

Mr. Watts: We have a distinction in our neighborhood between the kingbird and the bee-martin. They are a different sized bird. The kingbird is much larger than the bee-martin. I think the bee-martin is a more dangerous bee-catcher than the kingbird. What we call the kingbird is white under the wings when it is flying,

but the other bird is of a dark brown color. There may be some other distinction between the two kinds of birds.

Mr. Wilcox: We are discussing this for the purpose of getting information. I don't want to carry my point if it is wrong. I will be glad if I am wrong if you will furnish reasonable evidence of it. But as to whether kingbirds eat worker bees or not—several times I have seen them early in May, before there was a drone passed from the apiary—come into the yard and catch bees when it was so cold that only once in awhile a bee came out of the hive. I have seen them come close to the hive and pick up bees before they fairly got from the hive. I am confident they were getting worker bees, although I didn't catch them to see. I have often examined the gizzard and found drones and lizards and other insects in there. But you must catch them pretty quickly after they have swallowed it or you cannot tell what is in them.

Mr. Horstmann: I don't believe I ever killed a kingbird, but I have friends who have killed them because they thought they killed the queens. Unless he can tell us that the kingbird is of great value to us, I would advise Miss Candler to buy a good shotgun before she leaves the city and "lay for" the kingbirds before she loses the queens next year. Are the kingbirds of any use to us? If they are, I would not want to kill them, but if they cannot show any value, I would just as soon kill them as not.

Mr. Wilcox: They catch the millers and bee-moths.

Mr. Horstmann: My bees never have any moths.

Number of Colonies to Keep.

"How many colonies can a person keep producing comb honey if working on a farm?

President York: It would depend a little on the size of the farm.

Mr. Wilcox: I can answer that. I have tried it for twenty or thirty years and I have kept from three to four hundred colonies.

President York: How large a farm?

Mr. Wilcox: From 120 to 240 acres, but I had my whole family helping and some hired help.

Mr. Moore: Depends on the size of the farm and the size of the family!

Mr. Wilcox: And the amount of help.

Carniolan Bees.

"Has anybody had any experience with the Carniolan bees, and which strain is the best?"

Mr. Kannenberg: I was inquisitive about the Karniolan bees, and I bought a swarm of them. I never had as much swarming going on as with those bees. They were swarming every day in the year! I don't want any more of them.

Mr. Stanley: Well, I have tried them and they are great swarmers—best for rearing bees.

Bottling Honey.

"In bottling honey is it necessary to heat the honey to prevent it from crystallizing, or can it be bottled just as it comes from the extractor?"

Mr. Arndt: I don't know about bottling it as it comes from the extractor, but I know that nearly all the honey we receive we have to heat and liquefy it more or less before we can bottle it. If we don't, it will be somewhat clouded. Honey that is bottled warm and tightly sealed will keep from granulating a great deal longer than cold honey.

Mr. Wilcox: The hotter you heat it the longer it will keep from granulating. If you boil it, it will never granulate. I consulted the purchasing agent of the National Biscuit Company, and he said he had never found any that would not granulate, but after it granulated and they liquefied it, it would not granulate again. I said, "You heat it hotter than 160 degrees?" and he said, "Oh, sure!" But that spoils the flavor.

Mr. Arndt: Honey heated to 160 degrees will granulate again, but it will be some time before it will granulate. There are certain kinds of honey that if you boil will granulate in time.

Mr. Moore: Mr. President, give your experience.

President York: It has been some time since I was in the honey bottling business, but I certainly did bottle "some" when I was bottling by the carload, and buying glass jars by the car load. We heated the honey to as near as possible 160 degrees and sealed

it while hot. We used the "Tip Top" jar like this one, and found it to be the best that we had tried up to that time. I doubt if it can be improved on for a jar that will not leak under any conditions. We bottled it very quickly after getting it to 160 degrees, and had very little trouble with it granulating in the grocery stores. Where we found it did granulate, we took it back and reliquefied and re-labeled it without taking it out of the bottle.

Mr. Moore: What per cent would granulate?

President York: Perhaps not over one per cent would granulate before it was sold out.

Mr. Ahlers: If honey is heated to 160 degrees, will it not be affected in flavor?

President York: Not unless it is kept a long time at 160 degrees.

Mr. Ahlers: If it is brought up to 160 degrees and bottled immediately?

President York: I think not.

Mr. Ahlers: I heated some to about that temperature and I thought it did affect it, but I had no thermometer.

Mr. Moore: If I heat it with water under it, it is 212 degrees when your honey is 160 degrees. I have honey heated that way.

Mr. Ahlers: I heat all my honey in galvanized cans, and then take it off the fire instantly. After I heat it in water I put it in enamel kettles.

Mr. Moore: If you leave it over the fire the temperature will go on up.

Mr. Ahlers: I keep stirring it until it gets to that temperature, and then I take it off.

Preparing Bees For Winter.

"What is the shortest and best method of preparing bees for winter with the least cost?"

President York: Probably putting them in a cellar, if you have a cellar. This likely means outdoor wintering, though.

Mr. Wilcox: I think Miss Candler could answer.

Miss Candler: I don't know whether my method is the shortest or the least expensive. I winter in paper—wrap them in paper, with a super on top. I use tarred felt paper. It is the most practical for me.

Mr. Moore: On the summer stands?

Miss Candler: Yes, sir.

"Has any one had experience with wrapping paper around hives for winter or spring, and with what results?"

President York: Has anybody else had experience with tarred felt or any other kind of paper?

Mr. Moore: If no one has anything to say, that brings up a question that has been discussed at great length—the color of the outside of the hive, or the paint. To my mind, it is material to have a dark color. Everyone knows that black absorbs all of the rays of the sun. White does not absorb any of them. When you have a white cover it is glanced off, as if a bullet would strike there and glance away. The moment a ray of sunshine strikes a bee-hive with a black tarred paper, the ray goes right down in there, how deep I don't know, but it goes deep enough to be a very material matter in keeping up the heat and life of the bees.

Mr. Whitney: The kind of hives I have been accustomed to using are painted white, with perhaps some trimming; but the packing around the hive and over the top is so great that even though the outside of the hive were not painted, I don't think the sun would have any effect whatever. There is heat enough in that hive, in that packing, to keep the bees warm without any rays at all; they generate heat. Put a thermometer in there, and you will find it is up to 90 degrees even in cold weather. It seems to me that this talk about white paint on the outside of the hives, the objection to it, is a mistake. When we have the bees all packed good and warm with a thickness of cushion and planer shavings around the outside, or boxes, as have been described, I don't think the rays of the sun cut any figure at all.

Mr. McClure: A person would have to watch if he used just a single-wall hive and used tarred paper. The sun would not affect the bees. Would not the bees be liable to come out in cold weather and get stiff, and not be able to go back again?

Miss Candler: I always thought they were, but I have never had any trouble at all. I think I lose fewer colonies with paper than when I used packing.

Mr. Moore: Some of the friends may have forgotten that Dr. Miller does not

paint any of his hives, and he attributes some of his success to the fact that he does not paint them. They become almost as black as black paint, and he says it is a great help in early fall and late spring in helping the bees keep up the temperature.

Miscellaneous.

President York: I don't remember ever attending a convention of the Chicago-Northwestern Bee-Keepers' Association that has kept up as lively a fire of questions as this one. It has not lagged a minute. We have had a program all the time, and you have helped to make it. Dr. Miller attributes the success of our convention to the fact that we do not have long-winded papers—but something new coming up all the time. I want to thank you, as your president, for your patience with me as your presiding officer. I have tried to be fair. I do not suppose I have suited everybody, but I have done the best I could. I hope next year we will have a larger attendance, that you will have a good crop of honey, and that you will bring some one with you. We ought to have at least a hundred, or more. The Chicago-Northwestern Bee-Keepers' Association stands next to the National in the interest of its meetings. I have been to other conventions in other parts of the country, and it seems to me there is no other meeting that compares quite with ours in the interest that so many take in it, and I think one reason is because of the question-box program. I am sure we are always glad to have with us the members of the old Northwestern Bee-Keepers' Association, that used to meet here twenty-five years ago—Mr. Baldridge, Mr. Wilcox, Dr. Miller and Mr. Taylor. We could not get along without these old war-horses. Of course we are glad that new ones are coming here to take our places, and it is by the infusion of new blood that we can keep up the interest.

Mr. Horstmann: I would like to ask whether this association went on record as favoring a foul brood law for Illinois.

President York: Yes, sir; we passed the resolution just before dinner today.

Mr. Whitney: I wish to ask whether the members of this association have all received notice of the election of officers for the National, to forward their vote.

President York: During the month of November the officers of the National are elected. Postal card notices were sent to all the members. Is there any one here who is a member of the National who did not get a postal card ballot during November some time? The polls closed the 30th day of November, and doubtless the secretary, Mr. Hutchinson, is counting the ballots now, or has counted them. He will notify Mr. France. I hope to get it be-

fore the December American Bee Journal goes to press, so as to announce the result of that ballot.

Mr. Whitney: I received mine very late in November, not more than time to get it to Mr. Hutchinson; perhaps others had the same experience.

President York: I got mine near the first of the month. And now we stand adjourned to the call of the executive committee, in December, 1909.

REPORT OF PROCEEDINGS OF THE THIRTY-NINTH ANNUAL CONVENTION OF THE National Bee-Keepers' Association

HELD IN

The Sun Palace of the Wayne Hotel
IN THE CITY OF DETROIT, MICH.

Tuesday, Wednesday and Thursday, October 13th, 14th and 15th, 1908

The opening session was held on Tuesday Evening, October 13th, at eight o'clock.

The President, Mr. George E. Hilton, of Fremont, Mich., occupied the chair, and after having called the Convention to order, and after having extended greetings to those present and having congratulated the Association on the large number of members and friends in attendance, called upon Mr. E. Root of Medina, Ohio, to give his "Moving Picture Exhibition."

Owing to the fact that the apparatus was not in readiness to give the exhibition, Mr. Root was unable to carry out this part of the programme, but gave a demonstration of handling live bees, adding some remarks on how to quiet bees with and without the use of smoke; how bees could be put in condition for the purpose of uniting, introducing and handling bees in general.

The pictures were subsequently given on Wednesday Evening.

LIVE BEE DEMONSTRATIONS.

By E. R. Root.

On the program for the evening session for October 13th was a live-bee demonstration by E. R. Root, of Medina, Ohio. He had on the platform a large wire-cloth cage, inside of which was a nucleus of live bees

and a large dishpan. Before Mr. Root began his regular demonstration work he said:

"The handling of live bees before popular audiences and at bee shows is very common in England. The object of these demonstrations is to educate the general public on the subject of bees and bee-keeping, and, in particular, how bees may be handled with bare arms and face without being stung. In my work for this evening I hope to show you how I handle bees before crowds, taking them up by the handfuls, throwing them over my arms and face and on my head. I do not know whether the bees that I have in the box inside of the cage, where I am to operate, will prove tractable or not. While I find a great difference in the temperament of bees, yet I have nearly always been able to give my demonstrations without a single sting; and, after showing how bees can be played with like kittens, it is my custom to invite some one in the audience to come inside the cage with me and pick up a handful. Strange as it may seem, I usually have plenty of volunteers; and, on only one occasion, has one of these volunteers been stung. It happened in this way:

"A little German, who had had some experience with bees, volunteered his services. After he had been in the cage a moment or two I saw that he

was a little too 'fresh.' Observing how I threw the bees over my head, he proceeded to perform the same stunt; and, the next thing I knew, he was saying to me in an undertone, 'Mishter 'oot! Mishter 'oot! dese pees dey pe schtinging—py shiminy! ach!' Fearing a panic in the audience I told him to keep perfectly quiet. In throwing the bees on himself he threw them violently over me; and, if they were piercing HIS epidermis, they certainly were puncturing mine in no uncertain way. With my fingers I combed the bees off his hair and proceeded quietly to get them off my own person. 'Now,' said I, 'keep still;' and when he stepped out of the cage some of his pent-up ardor had visibly waned.

"Why was he stung? Because he had failed to observe my precaution not to push his fingers through the bees rapidly, and then throwing them too violently on his head. Now, bees will stand a good deal, but they will not tolerate such treatment as this. Let me explain.

"In order to make a success of handling bees by the handful it is exceedingly necessary to get them thoroughly under control. First of all, we use a little smoke in opening the box of bees. Next we pull out a frame and shake the inmates into a large dishpan. The other frames are shaken in a similar manner. This act has a tendency to frighten the bees. To complete the work of demoralization we now shake the pan as we would a corn-popper. One would naturally think that this would excite the bees to fury; but so far from doing this it has the opposite effect. Some bees require more shaking than others; at all events the process must be continued until the insects tumble over each other in hopeless confusion. When this stage is reached, one may push his hand very gently and slowly under the cluster, for they will be so demoralized that they will not offer attack. In pushing the hands under the now little pets it is very important to make the movement so slow that no bee will be crowded or pinched.

"Lately I have learned a new trick. I shake the bees up into a large ball, tip the pan up at an angle, and then ROLL the bees so that the ball will fall into the hand. A big bunch of them can thus be picked up; and then when the act is repeated with the

other hand, one can form a very pretty festoon or cluster of bees. They may now be placed against the face, or be gently shaken from the hand upon the head. But before doing this the ears should be plugged with cotton; for should a stray bee crawl into the ear, it would put the operator hors du combat; in fact, it might spoil the whole 'show.' After the bees are carefully lodged on the head, a quick shake of the hands will free any bees clinging to them. Then the fingers are passed over the top of the head, and the bees are gradually combed out of the hair. If this is done carefully, there will be no stings.

"After I have shown the various stunts, forming little swarms, uniting two clusters of bees, then stretching the clusters until they break, I shake the bees from the hands into the pan, then shake the pan, after which I allow the volunteer to pass his hands around amidst the bees. If he follow the volunteer to pass his hands ceive a single sting, and, at the end of his performanve, he will receive a round of applause from the audience.

"But before one proceeds to handle live bees inside of a cage he must remove his coat and vest, roll up his shirt-sleeves, remove his collar and tie, and last, but not least, tuck his trousers inside of his stockings. The baring of head, arms and neck gets the audience interested, for now they think the operator will surely be stung. It is very important there be no sleeve or loose fold of clothing under which the bees may crawl, get pinched, and sting."

With these remarks Mr. Root proceeded to remove his coat and vest, roll up his sleeves, and enter the cage. But the bees did not at first yield to the treatment; whereupon he explained to the audience that he would have to shake the pan until they showed that they were completely demoralized. He next picked up the bees by the handful, spread them over his face, and then threw them on his hand and neck. Some one in the audience volunteered the statement that, even if Mr. Root WERE being stung, he would say nothing; whereupon he replied that, so far, he had not received a sting; and after the performance was over he expressed his willingness to be examined by a committee.

While the demonstration was in progress many questions were asked, during which Mr. Root explained that, after the bees have been thoroughly subdued by the pan-shaking method they may be united with other bees; and that, if queenless, a queen could be introduced to them without difficulty. In fact, he explained that this method of getting bees under control could be used in practical work in the yard, many times, to great advantage.

The president then called upon Prof. E. F. Phillips of the Agricultural Bureau, Washington, D. C., who gave an address on "Bee-Keeping in Hawaii."

This paper was also to have been illustrated with stereopticon views, but owing to the reason previously mentioned, the views were not given until Wednesday evening.

Prof. Phillips' address is as follows:

BEE-KEEPING IN HAWAII.

Bee-Keeping on the Hawaiian Islands is one of the minor industries, which is being conducted with profit. As in all other places, this business can never become a leading industry from its very nature, but there is reason to believe that there is yet room for considerable expansion. The modified methods made necessary by a tropical climate and other conditions of a local character, present some new phases of the keeping of bees, and, in view of the fact that these modifications will be of interest to bee keepers on the mainland, as well as to those in Hawaii, it may not be out of place to give a brief account of what I was able to observe personally and to learn from others in the four weeks spent on the islands in making an apicultural survey.

The bee keepers of Hawaii were organized into an active and efficient association about two years ago. By united effort this organization has accomplished much that is of great value to the industry. When the question of marketing their honey under the regulations of the Food and Drug Act of 1906 arose, they sent a representative to Washington to present their case. In this and many other ways the bee men have shown themselves to be alert and progressive in looking after their best interests.

Methods of Management.

At the present time bee-keeping is largely in the hands of four corporations, they owning and operating at least four-fifths of all the bees on the islands. These companies are all managed by American citizens, but there are a number of smaller apiaries, some of which are owned by Japanese. The last named apiaries are usually not so well kept nor are they so productive. The total number of colonies at present is probably about fifteen thousand, and the annual output of honey, which is mostly shipped to the mainland or to Europe, is probably about nine hundred tons. The keeping of bees by corporations, as opposed to individual ownership, is something which is rarely observed elsewhere. Being located a considerable distance from the market and the expense of supplies and shipping being high, it has seemed desirable to the bee-keepers to organize companies so that they can make large shipments. There is also on the Hawaiian Islands a tendency, to a marked degree, to incorporate all industries, and doubtless this common method of conducting business has induced the bee keepers to adopt it. With this system it is possible for one skilled manager to oversee the manipulation of several thousand colonies, the actual manipulation being done in most cases by the Japanese helpers; in this way the cost of maintenance of the apiaries is reduced very considerably. Since the price obtained for Hawaiian honey is still rather low, it is, of course, necessary to reduce expense in every way possible.

The buying of "bee rights," as it is practiced in Hawaii, is something practically unheard of elsewhere, and would certainly appear to a mainland bee keeper as a new and strange procedure. The nearest approach to it is the renting of locations for outyards, which can usually not insure no competition. This would not be possible were it not for the fact that most of the available agricultural land on the islands is held in large tracts, mostly as sugar cane plantations and ranches. Arrangements are made with the manager of a plantation for locations for apiaries and the bee-keeper agrees to pay a certain amount for the use of the land and for the honey removed from these apiaries. Frequently this is in the form of an agreement to pay a certain sum for each ton of honey removed from the plantation, but at times it is a fixed

sum for the year, the bee-keeper assuming what small risk there is of getting a crop. The plantation management in turn agrees not to allow other bee-keepers to keep bees in their territory. There are frequently small holdings within the boundaries of the plantation, over which the plantation company has no control, and some other bee-keeper may lease this with the idea of allowing his bees to range over the entire plantation. If, for example, he puts two hundred colonies on such a holding the immediate placing of say five hundred colonies just across the line has a discouraging effect on this poaching and it can end in only one way, since the bee-keeper, who has a right there, has the advantage. The same thing happens when an outside bee-keeper gets too close to the boundary line.

Naturally, when land is divided into smaller holdings, as is the case almost everywhere on the mainland, such an agreement is not possible and a bee-keeper must run the risk of competition. There is no way of telling what amount of honey is taken from any given area when the tracts are small. The moral right of priority claim, which so many bee-keepers advocate, has small place in the manipulations of territory in Hawaii, where the bee-keeping companies pay for what they get and insist on getting it. One of the large companies gained its exclusive right by reason of the fact that it owns and leases a tract of over one hundred thousand acres for ranch purposes.

Owing to the fact that breeding goes on every day in the year, and, equally, to the fact that there is honey coming in practically all the time, it is possible to increase the number of colonies at a rate which is truly surprising. In one case, which was reported, twenty colonies were increased to four hundred and twenty in eight months' time. This was done by contract, the agreement being that the colonies should be large enough for manipulation in honey gathering. Of course, queens were artificially reared in this case.

Extent of the Industry.

At the present time there are on the islands probably about fifteen thousand colonies of bees, most of which are, as above stated, owned by four companies. From the custom house statistics it is shown that the

annual shipments of honey amount to about nine hundred tons. The Island of Kauai now supports about three thousand colonies, and, after traveling over almost the entire cultivated portion of the island, the author is of the opinion that the island is just about half stocked. The Island of Oahu seems to be well covered from an apicultural standpoint. Molokai is not a cane producing island, but the algarroba forest is nearly stocked and the only place for heavy expansion seems to be in the mountains where several forest trees are nectar bearing. The Island of Maui could not be examined as carefully as the others on account of inclement weather, but from reports received, it is obviously not stocked to the extent that it should be. The Island of Hawaii, the largest of the group, is relatively the least developed of any of the islands. There are only a few apiaries on this area, almost equal in extent to Connecticut, and there are great possibilities. On the south coast there are vast areas of cane and the same is true of the Hamakua coast on the north. The Kona coast would probably support some bees in the coffee plantations. I saw one such apiary. On the interior of the island there are vast areas which are entirely undeveloped from an apicultural standpoint, and the island can doubtless support thousands of colonies of bees at a profit.

The total area now actually stocked with apiaries would not nearly equal one-half of the State of Rhode Island in size, while the honey crop is probably twenty times as great as in that state. According to the census report for Rhode Island, it would be forty times as great, but we cannot use this data on account of its obvious unreliability. This comparison will show the honey-producing capabilities of the islands, as compared with our more northern countries, and will also show how thoroughly the areas are stocked where the industry has been taken up. A small part of Oahu is doubtless overstocked, due to crowding into a given area by competitive companies. There was no evidence of such overstocking elsewhere.

Overstocking an area with bees is a subject much discussed among bee men, and the situation in Hawaii illustrates very beautifully the fact that a theoretical discussion of how many colonies may be kept in one place is of no value whatever. Each location

must be judged on its own merits and a given area, which will support only twenty colonies in one region, may support one thousand elsewhere. It is also obvious that seasons vary to a marked degree. In many parts of the mainland, it is deemed advisable to keep not more than one hundred colonies in one apiary and to allow each apiary a radius of one and one-half to three miles. On the basis of these figures, from fifty to two hundred acres are necessary to support single colony of bees. Without discussing the merits of these figures, it is enough to say that this is the common mainland practice, particularly the more densely populated areas. In contrast to this, an examination of the methods in Hawaii are extremely significant. One area of cane on the Island of Oahu contains a little over twenty thousand acres. Near this is some algarroba forest, but not enough to influence the crop very much. This area supports nearly five thousand colonies, some of which yield exceptionally large crops. In certain parts of this area competition is too strong to yield proper results, but some apiaries yield over two hundred pounds to the colony. In some other cane areas, this record can be almost equalled. Algarroba will not produce so much per acre, but this is partly due to the fact that it blooms for less than six months while cane fields furnish honey dew every day in the year. One strip of algarroba forest on Molokai supports nearly two thousand colonies; it will not average more than one-half mile in width and about thirty miles of it is used for bees.

Sources of Honey.

Floral Honey.—The amount of floral honey produced on the islands annually is about three hundred tons. Formerly the only source of honey on the islands which was widely enough distributed to make bee-keeping commercially important was algarroba, native "Keawe." This tree was introduced to the islands by Father Bachelot, founder of the Roman Catholic mission, in 1837, and the original tree still stands on Fort street in Honolulu. It has been carried to all the islands and is one of the most valuable things ever introduced to the group. It furnishes not only an excellent honey, but the pods furnish excellent fodder and the wood is the main article of fuel.

The honey from algarroba is "water white" in color and granulates very soon after it is stored by the bees in spite of the warm climate of the islands. This characteristic makes frequent extractions necessary to prevent the combs from being clogged. In regions where algarroba is practically the only source of honey, at the close of the flow an amount of honey sufficient to keep up the colony until the next flow is left in the hive. This, of course, soon granulates. When the honey flow diminishes, the brood chamber is reduced and considerable honey is stored in the space formerly occupied by brood. When the next flow comes on a good deal of this granulated honey remains in the combs and since this cannot be extracted, these combs are removed and replaced either by empty combs or by foundation to give the queen more room. These combs containing granulated honey are then placed in huge solar extractors, the largest that I ever saw. With two hundred or more colonies in an apiary, there is often need for a solar extractor which will hold several hundred combs at a time and practically every apiary had such a piece of apparatus as part of the equipment. The sun's heat liquefies the honey and melts most of the wax, and the wax from the "slumgum" is then extracted by the usual methods. The honey from these solar extractors is not darkened as one would expect.

The algarroba tree is either the same species as, or very closely related to, the mesquite of the southwest (*Prosopis juliflora*). On the islands it grows to the size of a tree as is also the case in Mexico. In Texas it is very much smaller. In 1908 the trees came in bloom about March 1st, the time varying considerably in different localities on the islands. It usually blooms until August, and this very long blooming period adds greatly to its value to the bee-keepers.

The following list of honey plants, other than the algarroba, is taken from Bulletin No. 170, of the Office of Experiment Stations Report on Agricultural Investigations, in Hawaii, 1905, from the report of the Entomologist, D. L. Van Dine:

Various species of *Acacia*—wattle, koa, etc.

Sisal (*Agave sisalana*.)

Alligator pear (*Persea gratissima*.)

Banana (*Musa* spp.)

Various species of Eucalyptus.

Guava (*Psidium* spp.)

Lantana.

Various species of citrus-orange, lemon, lime, etc.

Loquat (*Eriobotrya japonica*.)

Various species of cucurbits.

Rose apple (*Eugenia jambos*.)

Sugar cane (*Saccharum officinarum*.)

Tamarind (*Tamarindus indica*.)

Tobacco (*Nicotiana tabacum*.)

Catalpa speciosa, a good honey tree introduced some three years ago by Mr. Jared G. Smith, special agent in charge of this station.

Ilima (*Sida cordifolia*.)

Palms.

Sugar cane should be omitted since the honey really comes from insects and not the cane proper. To these three other plants may be added "hila-hila" (Hawaiian for "shame," the name being given to a sensitive plant), "Mamani" and one other plant for which a name was not obtained. The botanical classification of these plants is not yet to hand. Mr. Van Dine also reports "oi" (*Verbena con tortus*), pili grass (*Heteropogon con tortus*), ohia lehua (*Metrosideros villosa*), and several others. This phase of the work is being done in a most complete manner by Mr. Van Dine, who will publish his results as soon as complete.

Other Sources of Honey.

Insect Honeydew.—Hawaii is peculiar in that the majority of the honey produced is from some source other than flowers. Two-thirds of the honey shipped annually from the islands is largely or entirely honeydew honey. The vast majority of this comes from the exudations of the sugar cane leaf hopper (*Perkinsiella saccharicida*) and possibly some from the sugar cane aphid (*Aphis sacchari*) although while on the islands I observed none of the latter species. Of course, in a tropical country there are many other insects producing more or less honeydew.

Honeydew from the sugar cane leaf hopper is very dark amber in color and slightly ropy. In flavor it very strongly resembles molasses from the cane juice. Since the color and flavor are so marked, a small amount of this when mixed with the mild light color-

ed algarroba honey imparts the color and flavor of honeydew to the entire amount. Most honeydew honeys on the mainland granulate very rapidly, but this type does not granulate at all. Samples several years old are as clear as when first extracted.

The chemical composition of Hawaiian honeydew honey is quite unlike that of floral honey and this fact has led to the charge of adulteration by buyers on the mainland and in foreign markets. Since nowhere else, as far as I am aware, is honeydew honey produced in such large quantities, it is not strange that cursory examinations were misleading. I saw enough while on the islands to convince me that, however unlike floral honey this product may be, it is a natural sweet product collected and stored by the bees and is then extracted and shipped with no additions of other sugars.

When the Food and Drug Act of 1906 went into effect, the Hawaiian Bee-Keepers' Associations sent a representative to Washington to find out under what name they could market their crop, since it does not conform with the standard of the Association of Official Agricultural Chemists. They were informed that it could be sold on the mainland market provided they label it just what it is. This they have done and it is now sold as honeydew honey. The bee-keepers of Hawaii fully realize the peculiar honey with which they have to deal and are not attempting to market honeydew honey in competition with floral honey for table use. It goes to the baking trade and for such use is reported to be satisfactory; at any rate the price received is equal to that received for algarroba honey.

As stated elsewhere, bees prefer floral nectar to honeydew. However, when the supply of floral nectar is not great the bees work on both and as a result there are mixtures of the two stored in the hives varying all the way from the pure honeydew honey to pure floral honey. It is these mixtures that cause the trouble in labeling. The standard on honey* allows some honeydew in honey and therefore, to be absolutely certain whether a given quantity of the product of the islands may be sold as honey or honeydew honey, a chemical analysis is necessary. The various mixtures which occur are well illustrated in Plate I. of Bulletin 110, Bu-

reau of Chemistry. This plate illustrates very well the influence of honeydew on the physical properties of honey. At one end of the series is the pure algarroba, which is represented as granulated, while at the other end is a sample of honeydew honey which is as pure as it is usually found. Between the two in perfect gradation are shown various mixtures just as they came from the hive in various extractions. The chemical analysis of these particular samples by Miss Alice R. Thompson show that the chemical composition varies in exactly

There is a test which may be applied with considerable safety. Algarroba honey granulates rapidly and pure honeydew does not; it has been found by analysis that mixtures which garroba honey granulates rapidly and chemical composition that they may be sold as honey. The flavor and color may be characteristic of honeydew honey in spite of the fact that the mixture contains enough floral honey to be sold as such.

The sugar cane leaf hopper was first collected on the islands by Dr. R. C. L. Perkins, now connected with the Hawaii Sugar Planters' Agricultural Experiment Station, in 1900* and by February or March of 1903 had "appeared generally throughout the cane fields of Hawaii in numbers sufficient to prove a serious check to the growth of the cane."† For several years the work of this insect caused a loss of about \$3,000,000 annually‡ to the planters and naturally they were anxious that something be done to stop this heavy loss. By various means the leaf hopper has been brought under control until to-day it is not abundant enough to hinder the growth of the plants "and plantations that were to a

*U. S. Dept. Agr., Office of the Secretary, Cir. 19, p. 11.

*The Leaf-Hopper of the Sugar Cane, by R. C. L. Perkins, Bulletin No. 1, Division of Entomology, Board of Commissioners of Agriculture and Forestry, Territory of Hawaii, 1903.

†The sugar cane leaf-hopper in Hawaii, by D. L. Van Dine, Bulletin No. 5, Hawaii Agricultural Experiment Station, 1904.

‡Report of the Governor of Hawaii to the Secretary of the Interior for the fiscal year ending June 30, 1907, p. 22.

certain extent abandoned are again producing heavy crops of sugar."§

During the time spent on the islands I saw no cane fields that were seemingly injured by the leaf hopper, but, on the other hand, there were no cane fields examined that did not contain many leaf hoppers. The fact that the leaf hopper is not doing damage enough to hinder cane raising does not signify that it has disappeared nor is there any biologic reason for believing that it will while cane is grown unless some entirely new methods of fighting it are found. The fact that six hundred tons of honeydew are produced annually from this source in spite of the fact that only a limited amount of the area is accessible to bees, is a certain indication of the untold millions of these insects which still exist.

The leaf hoppers exude a sweet gummy substance on the leaves of the cane and the honey bees work on this eagerly. However, where bees have access to both honeydew and floral nectar, they prefer the nectar to a marked degree. When algarroba begins to bloom the honey stored becomes noticeably whiter.

In view of the fact that honeydew honey has the taste and color of common molasses, it has been suggested that probably this product is gathered by the bees from the sugar mills which are so numerous on this island. I visited several such mills located near apiaries, on days when bees were actively flying. No bees were to be seen anywhere around the mill. If bees actually did come to the mill after sweets, they would become a serious nuisance to the workmen. Why they do not is something of a mystery, but I can vouch for the fact that I saw no mills screened to keep bees out nor did I see any bees at work in the mill or even on the pile of sweet refuse ("mud cake") outside.

Molasses is used for feeding cattle on the islands quite extensively. It is poured out in troughs or half barrels where the cattle can get it easily and frequently; these are located near apiaries. Many of these were examined as I went about among the apiaries and in not a single instance did I ever see a bee work on the molasses. It

§Ibid.

some cases these feeding troughs are as near as a quarter of a mile to apiaries. A dairyman near Waimea, Kauai, whose trough is located not a quarter of a mile from a large apiary, informed me that he had never seen bees working on the molasses. Obviously Hawaiian honeydew honey does not come from this source.

Extra-floral Honeydew.—In addition to the honeydew of insect origin, the situation in Hawaii is made still more complicated and interesting by the fact that the hau tree has nectaries on its leaves which secrete a honeydew. These are located on the veins of the leaves near the stem and are one, three or five in number. Small drops of honeydew may frequently be seen on these spots. It is interesting to note that these extra floral nectaries are present on the outside of the calyx of the flowers. There is apparently no true floral nectary.

The hau tree is used quite extensively as a hedge and grows twenty to thirty feet high. It is doubtful whether this is the source of any great per cent of the honeydew honey, but the fact that it is present makes it still more difficult to analyze the bee-keeping situation on the islands.

Disease Survey.

The bee-keepers of the Islands were very anxious to learn whether or not they have any brood disease among their bees. They were quite certain that there is none, but desired this opinion to be confirmed. For this reason the apiaries visited were carefully examined and absolutely no trace of any known infectious disease was found. In view of the fact that a brood disease would spread rapidly in that climate the bee men may consider themselves extremely fortunate.

The Convention then adjourned to Wednesday, October 14th, at eight o'clock a. m.

The following message was received from the Eastern Ontario Bee-Keepers' Association:

"Athens, Ont., Oct. 12th, 1908.

"W. H. Hutchinson,

"Sec'y National Bee-Keepers' Assn.

"Wayne Hotel, Detroit, Mich.

"Eastern Ontario bee-keepers send friendly greeting to National with best wishes for pleasant and profitable meeting.

M. B. HOLMES."

SECOND DAY.

Morning Session.

Wednesday, October 14th.

At nine o'clock a. m. the President took the chair and said:

"The Convention will please come to order. We have with us this morning one of the veteran bee-keepers and a veteran journalist of the State in which he now lives, and one who has done more perhaps in the interests of bee-keeping from a scientific standpoint and for the people of the world from a moral standpoint than any man now living in the bee-keeping ranks, and the session this morning will be opened by prayer by Mr. A. I. Root of Medina, O."

The audience rose while Mr. A. I. Root invoked the Divine Blessing.

The President—There comes a time in the history of every man's life when he feels himself inadequate for the responsibilities that rest upon him, and as I stand before you this morning as your President and feel the responsibility that rests upon me as the presiding officer of this Convention, national in name, but international in its make-up, I certainly feel not only honored in thus being permitted to stand before you, but I feel there is a responsibility that rests upon me that perhaps never did before.

I am not a stranger at presiding over bodies, but never before have I presided over a body of this character, except that I have been called to the chair in other national conventions to take the place of the presiding officer for a short time. I feel to congratulate the people of America because when we speak of this Association we must speak of it so broadly, because it includes not only the United States, but the entire Dominion of Canada as well. I feel this could justly be named, and perhaps properly, instead of the National Association of Bee-Keepers, the American Association of Bee-Keepers, or the International Association of Bee-Keepers; and I should be very glad indeed to entertain a resolution before the adjournment of this Convention looking forward to the time when our Constitution and By-Laws may be so changed that Canada shall have her just share in the pride of this Convention in having at least a portion of the name.

I feel we are under more than ordinary obligations to our friends from the other side of the line. They have come to us from time to time in our State and in our National Conventions, and we have felt their influences with us; and I say the people of the United States are under obligation to the Bee-Keepers of Canada; and it has been my purpose for the past three years in meeting with this Association in Chicago, and again at San Antonio, Texas, and last year at Harrisburg, Pa., to bring this Association where we now have it, in order that we might be so closely allied to our friends across the water that their numbers might possibly exceed ours; and I am not sure in looking over the faces but what the ladies and gentlemen from Canada perhaps exceed those from the United States. They have always been so loyal to the cause of bee-keeping and have been so kind to us that I say again we are under obligations to them. I congratulate them on being able to come and sit with us under the Stars and Stripes, under the flag that America so well loves, and I feel there is a kindred love on the other side for that flag, whose Star is the emblem of peace, and every Stripe a bond of union.

Well do I remember the last National Convention that met in the city of Detroit. As I remember it, it was about twenty-five years ago. At that time Father Langstroth was with us; and that grand old man, of which this gavel reminds me, planted the tree from which this gavel is made, upon the bands of which are the inscription and dedication to him; and it shall be the property of this Association so long as the Association shall last. It was dedicated at the Convention at Chicago some three years ago.

Many years have transpired since that time. I think one Convention has been held in Canada since then, and one only. We have been nearly all over the United States; from California to the State of New York; the continent has been well traversed; and where it will go next time I do not know, but I do know that wherever it goes there will be loyal hearts, men and women true to the keeping of the fraternity that they represent; and I feel it an honor to stand before you this morning. I think I once said that

to be permitted to stand before an audience of American citizens was an honor that could not be conferred upon king, prince or potentate under a monarchical government, and so here with that freedom of atmosphere we breathe we are glad to welcome those from the other side and from all nations of the earth to us. We cannot reach out too broadly; and our pursuit is one that is widening and deepening both in interest and otherwise, representing as we now do about 700,000 bee-keepers with an annual output of about fifty millions of dollars. This we get from statistics which I think are quite accurate. It may sound large to us, but only a few days ago I clipped from a paper that is published by that veteran publisher who publishes the Sunday School work in Chicago this clipping. Where he got the information I do not know but it reads like this:

"Work of Bees."

"Three hundred billion bees made enough honey during the current year to fill a train of cars long enough to reach from New York to Buffalo. At the low wholesale rate of ten cents a pound it was worth \$25,000,000, and if the 700,000 bee-keepers of the country had worked as industriously and skillfully as did the bees, the weight of the output would have been three times as great and the value \$75,000,000.

"In one year the beehives sent to market a product worth nearly as much as the barley crop, three times as much as the buckwheat crop, \$6,000,000 greater than the rye crop, and nearly \$9,000,000 greater than the rice crop. All of the rice and buckwheat grown on an aggregated area of 2,126 square miles did not reach to the value of the money by \$151,259.

"To appreciate these results, one must necessarily strive also to appreciate the number of insects at work. That is rather difficult, for three hundred billion stretches a long way beyond intelligent human comprehension. The human mind doesn't work well in anything mathematically greater than thousands."

So you see we are not small, and yet I feel that sometimes we almost belittle ourselves. I don't think we have had ourselves up where we really belong. Our work does not end in

the keeping of bees. I have felt we ought to have a closer association with the horticulturists of our country. One of the most profitable meetings I ever attended was a joint meeting of the State Horticulturists of Michigan and the State Bee-Keepers held at Saginaw some twenty years ago.

Mr. A. I. Root—(Interrupting.)

Amen!

The President—Brother Root says "Amen" and says it was a good meeting. It was the first time I ever presided over a State meeting. I thought we had a good meeting. Perhaps it was because I was young. I am older now. That meeting did much to bring about a reconciliation, for at that time a reconciliation was necessary, between the Bee-Keepers and Horticulturists of the State of Michigan, and I think equally so in other States, because they thought the bees punctured the grapes and ripe fruit and the bees were doing them a great injury. They have since been educated to know the bee is really their best friend. The interests of the bee-keeper and horticulturist are so mutual they ought to meet in convention together annually that we may understand from them their things and they from us our things, and then we could meet more mutually together and be of mutual benefit one to the other. It is well known by our horticulturists that many of our very best fruits would fail to produce fruit at all were it not for the insect kingdom, and the bee being more numerous in the early part of the season, it is more valuable to the horticulturists than all the other insects combined.

It is not my purpose to take up your time this morning. We have a very excellent program upon subjects in which we are all interested. The diseases of bees I think we very little understand. We have been perhaps fortunate in the State of Michigan in having a good "Foul Brood Law," and we have had good inspectors, and the work is going on nobly. You will hear from them later on.

In conclusion, I want to again mention the kindly feeling of the people who have come to us from the different states and from the different nations represented here, and I wish we might have entwined about our meet-

ing hall somewhere the flags of these two great nations. There are no greater nations on the face of the earth than are represented by the Stars and Stripes and by the Union Jack; and we live together in such close harmony and there is such a kindly feeling between the Mother country and the United States, that to-day we feel no distant relationship whatever, and I feel that it is only fitting that I should in one hand raise the Stars and Stripes and in the other hand the flag of Canada, and what better can I do than to fold them across the most vital parts of man and say! "Thou who lookest upon the nations of the earth, wilt Thou look upon us in Thy divine and in Thy sympathetic love of nature and watch over us, and protect us through time, and finally when we are done with all these things of earth wilt Thou accept us and save us where we shall be reunited as one grand nation before the throne of Him who presides over all nations." (Applause.)

Mr. W. T. Davis (Stratford, Ont.)—I would like to move a vote of thanks to the President of this meeting for the very able and pleasant manner in which he has referred to the Bee-Keepers of Canada, and for the sentiments that he has expressed with reference to an International Bee-Keepers' Association.

Dr. Bohrer (Kansas)—It gives me very great pleasure to second the motion.

The Vice President, Mr. G. W. York, put the motion, which, on a vote having been taken, was declared carried with applause.

The Vice President—I thank the Bee-Keepers of Canada very much indeed. I hope to see you later.

The next number on our program is "The Bacteria of Bee Diseases" by Dr. G. F. White of the Apicultural Bureau, Washington, D. C.

Dr. White then read a paper entitled "The Relation of the Etiology (cause) of Bee Diseases to the Treatment" as follows:

Bee-Keeping is not an industry which brings a fortune to a few, but is one the profits of which add comfort to 700,000 homes in America. This industry, which is a pleasure and a profit to so many, is beset with its difficulties. One of the greatest ob-

stacles encountered in the successful pursuit of bee keeping is disease. There are a number of diseases which attack the honey bee. Those which cause the greatest loss attack the brood. These diseases are known to the bee-keeper as American foul brood, European foul brood, and pickled brood. Considerable loss is sustained also from paralysis and dysentery. Other disorders of less importance are sometimes encountered. If the apiarist is to treat these diseases effectively it seems to me he should become familiar as possible with their etiology. Therefore I have chosen this opportunity to discuss the causes of bee diseases as far as they are known, and to emphasize the importance of such knowledge in the treatment.

The word disease is made up of the two parts: "dis" referring to a negative condition, and "ease" meaning a state of rest. By combining the parts, we have the very appropriate word meaning a negative state of rest. We are all familiar with health which is the state of rest. It is the condition which we experience when all the organs of the body are, so to speak, in a state of equilibrium. And departure from this state of health is disease. I would have you remember that disease is alike in nature in all the animal kingdom and differs only in kind.

To understand best the nature of disease, we must study the causes of disease. A number of factors may combine and be responsible for a diseased condition. This group of factors may combine and be responsible for a diseased condition. This group of factors is known as the etiology. Etiology then means the causation of disease. Let us further consider the etiology of disease and use bee diseases largely as illustrations.

Etiology (Cause) of Diseases.

Every abnormal condition in the body of the bee, which we know as disease, has a cause which has brought about such a condition. In most of the diseases of man and the higher animals, comparatively little is known of the etiology. Likewise and unfortunately the same is true of bee diseases. Gradually, but slowly, new facts about all diseases are added to our knowledge, the unfortunate thing being that so many are reported as

facts which have never been demonstrated to be true.

In the study of the etiology of a disease and in the discussion of it, it is convenient to divide the casual factors into predisposing and exciting. Under the predisposing causes which may be considered as factors in bee diseases, we have age, sex, race, heredity, climate and preexisting disease. Under the exciting causes, we may consider food and microorganism.

To illustrate, let us consider the different factors just mentioned.

Predisposing Causes.

Age.—In your experience with human diseases, you have learned to expect scarlet fever more often in children than in adults; to expect typhoid fever in young adults and cancer in those more advanced in life. In bee diseases, we expect European foul brood to attack larvae that are younger than those which suffer from American foul brood. We expect the so-called "Pickled brood" to die just before or after capping, while paralysis is, as far as we know, a disease of adult life.

Sex.—Of some importance in human diseases is the factor sex. Appendicitis and diabetes, for example, occur more frequently in men, while cancer is more frequent in women. In bee diseases, we expect in American foul brood to find the worker larvae more often attacked than the drone, while in European foul brood this difference, if it exists, does so only to a slight degree.

Heredity.—You are all familiar with the fact that heredity is considered as an important predisposing factor in tuberculosis, gout, insanity, etc. It is interesting that in the so-called "pickled brood" there is some evidence which indicates that heredity plays an important role.

Race.—The negro is considered quite susceptible to tuberculosis, while gout is comparatively rare in the race. Some bee-keepers believe that race is an important factor in bee diseases. Comparatively little is definitely known on this phase of the etiology.

Climate.—That some human diseases are more frequent in some climates than others is a fact familiar to us all. That climatic conditions play a part in bee diseases seems to be quite probable.

Preexisting Disease.—This factor has very little, if anything, to do with bee diseases. By preexisting disease we mean that when an individual passes through an attack of a disease, the disease predisposes that individual to other diseases. This is illustrated in various human and animal diseases. In bee diseases, we do not know whether any individual bee ever recovers from an attack of disease. Many bee-keepers think that adult bees in American foul brood colonies are less active than in normal colonies. Whether they suffer from disease, we do not know. It is possible, but not probable, that they have suffered a light attack of disease while in the development stage and emerged as adult bees with weakened organs which do not perform a normal function. If this were true, it would illustrate the importance of preexisting disease as a predisposing factor in etiology.

Having thus briefly considered some of the more important predisposing causes which enter into the etiology of bee diseases, let us consider two of the more important exciting causes, food and microorganism.

Exciting Causes.

Food.—The character of food is believed by many bee-keepers to be an exciting factor in dysentery. Should the food contain poisons, grave results might follow. Some attribute paralysis to the character of the food but this is far from a demonstrated fact.

Microorganisms.—By microorganisms we mean those living plants and animals which are very small and must be magnified greatly before they can be seen. Those which are to receive our attention are bacteria, protozoa, and fungi.

Bacteria.—We have now come to the consideration of that factor in the etiology of bee diseases which is most important and with which we would have the bee-keepers familiar. The annual loss sustained by the bee-keepers of this country, due to the one cause, bacteria, is to be reckoned in millions. It is unfortunate that it is necessary to use the word bacteria because too many at once think that they are not able to understand anything about bacteria. This is a mistaken idea. It is not difficult to understand

the facts about them which are most important in the treatment of disease. It might be well to review here some of the things about their life history.

Nearly two years ago, I had the honor and pleasure of reading a paper at a meeting of bee inspectors, held at San Antonio, Texas, upon the subject of the bacteriology of bee diseases. This paper you can find in Bulletin No. 70 of the Bureau of Entomology, of the United States Department of Agriculture, on page 10. In it is discussed briefly the nature of bacteria, their distribution, the methods of their study, and the results of their activity. In the paper you are told that bacteria, often called germs, microbes and parasites, are very small plants. So small, indeed, that 12,000 placed end to end measure but one inch. They increase in number with marvelous rapidity. Under favorable conditions each bacterium in twenty minutes becomes two. At this rate countless millions are formed in twenty-four hours. As the soil becomes exhausted in which they are growing, many species form spores which are in a way comparable to the seed of higher plants. These spores are very difficult to destroy by heat and other disinfectants. It is well to remember, concerning the distribution of bacteria, that they are found in very large numbers everywhere about us but that most of them are as harmless as the vegetables we eat. But should there be introduced into an apiary, for example, species of bacteria which cause American foul brood, then the brood becomes exposed to the disease and will probably contract it.

The study of bacteria must be done for the most part in the laboratory. By the use of the microscope, we are able to tell the genus (e. g. bacillus) to which an organism belongs, and by specially prepared media or soil, we are able to determine the species to which it belongs (e. g. alvei.)

Having determined these things about bacteria, we are interested in finding out what they are capable of doing. We learn that some do good, for example, the bringing to decay the remains of dead animals and plants, while other species do harm by their ability to produce disease or death in the animals in which they are able to gain entrance. The disease, American

foul brood, which causes the greatest loss to the bee-keeping industry has been demonstrated to be caused by bacteria. Above all I would have you understand that the death of the brood is due to one species of bacteria growing in the larvae.

Protozoa.—In contrast to bacteria, the protozoa belongs to the animal kingdom. They are very small unicellular animals. Many species are harmless as are many species of bacteria, while some species, as some bacteria, have the power to produce disease. They produce disease and death in a manner very similar to bacteria, that is by growing in the body of a living animal. As far as we know, none of the bee diseases are due to protozoa. One investigator described what he thought was a protozoon and named it *Spirochaeta apis*. It was shown that he made an error in his observations. Therefore there is no *spirochaeta apis* and no protozoon, as far as we know, which is pathogenic to bees.

Fungi.—This is rather a broad term but in the diseases of animals we usually refer, in speaking of fungi, to that form of plant life which is higher than bacteria. They are usually made up of branching mycelial threads and have a variety of methods for producing spores. One writer described one species, *Aspergillus pollini*, which he was supposed to have proven to be the cause of pickled brood, but he had not done so.

To the above groups belong the known exciting causes. There are also unknown exciting causes. When the unknown causes become known, they may be found to belong to the groups mentioned above.

There is a very important classification of diseases into those which are infectious and those which are non-infectious. From what has been said this classification becomes clear to us.

An infectious bee disease is one which may be transmitted from one colony to another through the natural processes in the apiary. American foul brood and European foul brood are examples of this class of disease. What is transmitted in an infectious disease? It is the exciting cause of that disease. In American foul brood it is one species of bacteria, *Bacillus larvae*. In European foul brood, we do not know what is transmitted.

Since we do not know the exciting cause, it must be classed under the unknown exciting causes. When the cause is determined, it will probably belong to one of the three groups of microorganisms mentioned under the known causes.

A non-infectious disease is one which is not transmitted from one colony to another. The so-called pickled brood and paralysis, as far as we know, illustrate this class of diseases. This brief discussion of the etiology of disease is given in order that you may get a clearer idea of the nature of disease and what is meant by etiology. We shall now consider treatment of disease and illustrate with bee diseases.

The Treatment of Disease.

Those who are familiar with bee diseases are also familiar with the different methods of treatment. It is not my purpose to discuss any of the classical methods, but to suggest a few of the principles upon which such methods must be based if they are to be most effective. Treatment is both preventive and curative.

Preventive Treatment.—Too many believe that treatment of bee diseases consists in the control of eradication of a disease after it is found in the apiary. That is only the minor part of treatment curative. The treatment which is of major importance is the preventive treatment. Prevention is much easier than cure. To prevent disease in the apiary is to keep it out. To keep it out is to keep out the exciting cause. In order to keep out the exciting cause, it is desirable to know its distribution or where it is found. In American foul brood, the exciting cause, *Bacillus larvae*, is found in immense numbers in the body of the diseased or dead larvae. These dead larvae, for the most part, are allowed by the bees to remain in the brood cell as a scale. The honey also has been demonstrated to contain the bacteria which produce this disease. The pollen may be contaminated with the spores of this disease-producing organism. The combs from an apiary affected with American foul brood are a fruitful source of infection. The inside of the hives which have contained colonies suffering with American foul brood may be contaminated with the germs which produced the disease. Honey extractors, honey

tauks, and wax extractors, which have been used in infected apiaries, are also a fruitful source of infection. Therefore, if you are to keep the disease-producing bacteria out of your apiary, and thereby keep out disease, you must not feed honey unless you are positive that it did not come from an infected apiary or that it has been thoroughly boiled. Neither must you use old combs unless you are positive that they have not been in an infected apiary. Use no used bee supplies from an infected apiary unless they are thoroughly disinfected.

These things being true of the infectious disease, American foul brood, of which we know the cause, until the cause of any other infectious disease can be determined, we can do no better than to suggest the use of the same principles in the treatment of such a disease, as must be used in the successful treatment of American foul brood.

Curative Treatment.—In the curative treatment, considering the colony as a unit, use is made of two widely different principles—the removal of the disease-producing material, thereby removing the germs, and the use of drugs.

In separating the disease-producing germs from the colony, all the combs are removed which removes the principal sources from which the brood is infected—foul brood larvae and honey. It is always safer to allow the bees to go into a new hive or a hive which has been thoroughly disinfected. The greatest care should be exercised in protecting all infectious material which has been removed, that it may not be robbed by the bees.

The principle involved in the treatment by drugs is that of an antiseptic. The theory is that a small amount of some drug like beta naphthol, salicylic acid, carbolic acid, eucalyptus, and formic acid, etc., is sufficient, when taken with the larval food, to prevent the growth of the pathogenic bacteria.

Having thus in a general way considered the subject of the etiology of disease and the treatment in accordance with such knowledge, let us consider the different diseases separately.

American Foul Brood.

That *Bacillus* larvae is the cause of American foul brood has been demonstrated conclusively. It is a species

of bacteria which, when it is introduced into the healthy larvae, multiplies rapidly and causes the death of a large amount of the brood. When the larvae die, the body decomposes and the remains dry down to a tongue-like scale on the lower side wall of the cell. In this scale are millions of spores which are able to produce disease in other larvae should they be fed to them.

Just how the bacteria are carried from a dead larvae to a healthy one we do not know. It is not uncommon, in examining the brood, to find only a portion of a larvae in a cell, the bees having removed a part of it. On breaking the body wall of a larvae in examining for foul brood, bees readily suck up the contents which flow out. This is true when the larvae which is punctured is healthy or sick with disease or which has been dead a few days. The larvae at these stages of the disease contain a very large number of the disease-producing bacteria. These observations would indicate that in this way, in part at least, the infectious material might be carried to healthy larvae. Actual contact of the appendages of the bee with the foul broody material, and the subsequent contact of the same appendages with the food of the larvae may be a method by which the disease-producing bacteria are spread. We do know that in foul brood it is possible to obtain *Bacillus* larvae from the honey, and we do know that when bees are fed the spores of *Bacillus* larvae in honey, American foul brood will appear in the apiary.

The spores of this bacillus are very resistant to heat and other disinfectants. They resist the boiling temperature of water for fifteen minutes. In five per cent carbolic acid they were not killed in two months' time. This was demonstrated by obtaining growth in cultures after the spores had remained in this disinfectant for that length of time. Likewise we have demonstrated that the spores of *Bacillus* larvae when taken from the scales of American foul brood, resist the action of mercuric chloride (corrosive sublimate) 1:1000 aqueous solution for two months. Having these facts before us, we can better judge the methods of the treatment.

In treating this disease, we must bear in mind the preventive and curative measures. In preventive treat-

ment, many of the conditions you can control; others may be difficult. You can at least be sure that you import no bees or used supplies which might have been in an infected apiary. Use no old combs and feed no honey of which you do not know the history. In this way the bacillus which causes the disease in a large measure can be kept out of the apiary. There are conditions which are difficult to control. Should a nearby apiary be diseased and some of the colonies become weak or die out, it might be difficult for you, in a dearth of nectar, to keep your bees from robbing from the diseased apiary and in this way bring these disease-producing germs to your healthy colonies.

Some preliminary experiments have been made but the results do not indicate that drugs, in the treatment of this disease, have the value advocated by some English writers.

European Foul Brood.

European foul brood is another infectious bee disease. It attacks the brood at an earlier period in the growth of the larvae, as a rule, than American foul brood. The cause of this disease is not definitely known. From brood dead of this disease, Cheshire and Cheyne isolated *Bacillus alvei*. From their work it was long supposed that *Bacillus alvei* was the cause of the disease, but later investigations make the value of their work doubtful.

A number of organisms have been found in the larvae dead of this disease and some of them have been described. One species has been encountered in our investigations of the disease which is of special interest. The individuals of this species are quite small, apparently non-spore-producing media. Until we know more about this species, it will be referred to as *Bacillus* "Y." Since the cause is not positively known, the amount of heat and chemical disinfectants to destroy the virus has not been demonstrated. If, later, *Bacillus* "Y" is demonstrated to be the cause, we shall expect that very much less heat will be sufficient to kill it than is necessary to kill *Bacillus* larvae, the cause of American foul brood. Likewise we shall expect that disinfectants will be much more readily effective. As the exciting cause has not been demonstrated, the determination

of these facts have not yet been made. Until we know more about the etiology of European foul brood, we can do no better than to suggest the application of the same principles which are found advisable in American foul brood.

So-called Pickled Brood.

We refer to this disorder of the brood as the "So-called Pickled Brood" and not Pickle Brood, because the condition which William R. Howard of Fort Worth, Texas, described is not what the bee-keepers know as Pickled Brood. The exciting cause of this disease is not known. The larvae die at that age just preceding or just after capping. Some bee-keepers have a theory that heredity plays an important part as a predisposing cause. As far as is known, it does not seem to be infectious.

Treatment.—This disease is treated by some bee-keepers by requeening, on the assumption that heredity is the important factor in the production of the disease. If more were known concerning the etiology, the treatment might be materially changed.

Paralysis.

Paralysis is a disease of the adult bee. The cause of this malady is not known. It does not seem to be infectious although in some apiaries a large number of colonies may be affected at the same time. Some have advanced the theory that the character of the food is the exciting cause.

Treatment.—Since we know nothing positively about the cause, we can suggest very little in the way of treatment. The removal of the stores from the hive would tend to remedy the defect if the character of the food was an important factor in the etiology.

I have thus briefly called your attention to the nature of bee diseases, the etiology as far as it is known, and suggested some of the principles upon which the methods of treatment must depend if such treatment is to be most efficient. If we should review what we have just said concerning the etiology and treatment of the different diseases, we observe the following facts:

There is but one disease, American foul brood, of which we know absolutely the exciting cause. It is a species of bacteria but there are many

things concerning the nature, the distribution, and the activity, of which we do not know. The facts which have been determined enable us to suggest some of the principles upon which the treatment must be based. Just so rapidly as our knowledge of the etiology of this disease increases, so rapidly will we be able to suggest principles for the improvement of the methods of treatment.

In European foul brood, we only know positively that the disease is infectious and we can do no better than to use the principles gained by the study of American foul brood. As our knowledge of the etiology of this disease increases, the methods of treatment will be altered.

In the so-called "Pickled brood" we do not seem to have an infectious disease. Nothing is positively known of the etiology except that the larvae die at approximately the same age in all cases, which is about the time of capping. The treatment that is used by some is based upon the principle that heredity is an important factor, and, therefore, requeening is resorted to. In the disease of adult bees known as paralysis, practically nothing is known and practically no treatment is known to be effective. It will be noted that in every case the treatment is based upon the knowledge of the etiology.

The treatment of any disease rests primarily upon the removal of the cause. This presupposes some knowledge of the cause. It is clear, then, that the better we know the cause the better will be the methods of treatment. There are many things of very great importance in the etiology of bee diseases which are yet to be determined, but there are many things which are known that if applied by the bee-keeper will prove to be of great value to him financially. It is to be hoped that the bee-keeper will make himself as familiar as possible with the nature of the etiology of bee diseases. It is not necessary that one should understand all the details of the work which must be done in order to determine the cause of disease. When you have read carefully all that is written concerning the investigations of bee diseases, we should be disappointed in you if you should presume to know all about it. It is just as impossible to become familiar with the details of the investigation of bee

diseases and not work in the laboratory as it is to become familiar with bee-keeping and not work in the apiary. However, there is much about which all can know. It is far more important in the control of bee diseases that some of the etiology be known to all than that all of the etiology be known to some. If this scourge of our industry is to be controlled, and it can be controlled, it will be done by means of methods which are based upon a knowledge of the etiology of these diseases. Too, if it is controlled or eradicated, it will be done by the united action of well-informed bee-keepers. From this discussion, I can draw the one conclusion—that in the knowledge of the etiology of bee diseases lies the hope of their control.

Dr. Bohrer—There is one point I desire to call attention to. Dr. White refers to the fact that bees that are hatched in a colony diseased with foul brood appear weakly, and that I think appears to be the case until they are transferred or shaken upon comb foundations. My experience has led me to believe that so soon as they are put upon comb foundation the manifestation of the ailment or weakness ceases.

My experience with the drug treatment has not been satisfactory at all. In fact I regard it as being entirely unavailing. Nothing will answer but the removal of the comb and honey and putting them into clean hives. That is the only remedy I have found at all effective.

Mr. Holterman—I would like to ask Dr. White as to the source of infection. He speaks of the need of disinfecting hives. I think we should all be open to change of view and open to investigation, and that is a question upon which there is a good deal of difference of opinion. I would like to ask if there is any actual evidence, the result of investigation, which has been brought forward to show the disease is ever transmitted in that way. I believe it may be a source of infection, and I believe it would be well to try to carry on some investigations along that line. I think it is more dangerous to hold the view that it is not a source of infection and act upon it than to believe it is a source.

Dr. White—As far as I know there has been no work done upon that line. The paper read that it would be safer

to disinfect the hives, but whether it is necessary or not we do not know. If there were honey or burr combs containing honey left in the hive it would be almost necessary to remove them.

Mr. Holterman—Do you think it would be possible during the next year to take colonies in which the disease has been bad and see if it is possible to get cultures from a hive which has not been disinfected?

Dr. White—I can't say positively what will be done during the coming year, but it would be a very good point to bear in mind when we can get to it.

Mr. Frazem—I would like to ask the doctor if it is not a fact known to the scientific world that there are bacteria of health as well as bacteria of disease, and that there is always a battle between the bacteria of health and the bacteria of disease, and that being the fact, if it is not possible to apply the principles of hygiene to the conditions of our bees and keep them in a healthy state so that it would be practically impossible for them to take the disease even when there is a chance of contagion.

Dr. White—I think no matter how healthy your bees are, if they get a sufficient amount of honey which contains the spores of bacillus larvae they will get the disease. Although the suggestion is a good one, we know definitely nothing about the matter. I believe it would be better always to keep your colonies in as perfect a condition of health as possible.

Dr. Bohrer—I understand that has reference to an antidote. That being the case, as far as known now, the best antidote I have found is hot water or fire.

The President—The next number on our program is "How to Detect and Know Bee Diseases," by W. D. Wright of Altamont, New York, one of the New York Inspectors of Apiaries.

Mr. Wright—I think my paper will corroborate or follow along the same lines as that which Dr. White has given us. It is as follows:

HOW TO DETECT AND KNOW BEE DISEASES.

Of course Mr. White's method of determining the different bee diseases by the use of the microscope, is abso-

lutely correct, but as the majority of bee-keepers are unable to use this instrument in their diagnosis, it is well that there are certain characteristics present in the different form of disease which will enable careful, observant bee-keepers to determine with the naked eye, what disease, if any, is present.

I will first describe "European Foul Brood" (*bacillus alvei*) which has caused greater losses among the apiaries of New York State than all other diseases combined.

On opening a badly infected colony the most striking feature is the scattering capped cells containing brood. When you notice such an appearance don't fail to look for further evidence.

Many of these capped cells contain healthy brood, and the mottled appearance of the comb is caused by the large number of larvae, that, on account of disease, fail to mature and are never capped.

However, in the earlier stages of the diseases, we are obliged to look for other symptoms, always remembering that the pearly white and glistening larvae are healthy, and only those which have lost their lustre, and in some cases become mis-shapen, or which show a small black or bright yellow spot near the center, are to be looked upon with suspicion.

This latter symptom is not always present, as a colony may be badly affected without showing any such.

After the larvae dies it turns to a dull yellow color and continues to grow darker with age, running through all the shades of brown to nearly black.

Under favorable conditions this disease rapidly spreads throughout the brood nest until the majority of the brood is dead, and the hives become almost cesspools.

At this stage the brood gives off a very foul odor, similar to "American Foul Brood."

In this disease most of the dead brood is uncapped, but occasionally a few of the dead are capped, the capings of which may be sunken or perforated.

There is little or no ropiness found in this disease. The dead larvae often remain coiled around the bottom of the cells, drying down to a thin scale

or skeleton, showing the rings or segments.

"American Foul Brood (*bacillus larvae*), is certainly a close second to that just described. Its characteristics are quite distinct from the former disease, viz.: Fewer of the larvae die before the cells are capped, hence there are many more perforated and sunken caps in this disease.

The dead larvae are at first of a light chocolate color, but gradually turn to a very dark brown, forming a thin scale on the lower side of the cell, which is very tenacious and seldom removed by the bees.

Before the dead larvae dry out they consist of a viscous or ropy fluid which may be drawn out of the cell two or three inches without breaking.

There is also a rank odor present in the hive at this stage of the disease. I really dislike the term "Glue pot odor" as applied to this disease, and I think it an insult to the glue manufacturer. It seems to me to be somewhat out of date, as in this age of refined and prepared glues, most bee-keepers would probably be more unfamiliar with the crude ill-smelling product than with the odor of the disease itself.

Next in order is what is known as "Pickled Brood." This is a peculiar disease of the larvae which causes death at about the time of capping of same, sometimes just before.

At this time they are of a light brown color, and have a distended, dropsical appearance. The skin is rather tough and filled with a watery fluid.

The larvae usually lie on their backs and lengthwise of the cells, both ends sharply pointed, sometimes having black heads. Occasionally they appear in a different form, viz.: they are flattened, and lie against the lower side of the cell, extending nearly the full length of same, and with black and ragged edges.

The disease looks quite formidable, and it is not surprising that it is some times mistaken for "Foul Brood." There is little, if any, odor present.

Palsy, or paralysis, is a disease of the adult bees only, and is usually not very serious in the northern states. Often only a few scattering colonies in an apiary will be affected by it.

The diseased bees present a shiny

or greasy appearance, as most of the hair on the thorax has disappeared, having probably been removed by other bees in biting and teasing them.

Their abdomens are often greatly distended.

They also often shake and stagger about, finally leaving the hive, either of their own accord, or through expulsion by the healthy workers of the colony. They drop at the hive entrance, sometimes by hundreds, some crawling about over the ground until they finally disappear.

Mr. Williams—I would like to ask Mr. Wright one question, and that is in regard to the season of the prevalence of these diseases, if either one of them would be worse in the spring or fall than the other?

Mr. Wright—Yes. We find European Foul Brood to be much more prevalent in the spring. As soon as they commence breeding rapidly the disease shows up in the apiaries. After a good flow it disappears greatly unless it is very strongly seated in the apiary. I have a sample of European Foul Brood with me that was taken from a hive about a week ago.

Mr. Holterman—Does it seem to spread more in the spring than later in the season?

Mr. Wright—Yes.

Mr. Holterman—Can you give us any reason for that?

Mr. Wright—Robbing is much more prevalent in the spring than in the fall.

Mr. Holterman—The extent of the disease is not reduced later on in the season in the individual colony, but it is a matter of spreading.

Mr. Wright—Yes, in the individual colony.

Mr. Holterman—Then that could not be attributed to robbing very well.

Mr. Brown—I would like to ask Mr. Wright if Mr. Alexander's treatment of foul brood has been adopted as the standard?

Mr. Wright—No, sir; Bee Inspectors have not adopted it and do not recommend it.

Mr. A. I. Root—The gentleman has brought in what I would judge was a sample of American Foul Brood and handed it to Mr. Taylor.

Mr. Byers—Did I understand you to say that the odor of European Foul

Brood is similar to the American Foul Brood?

Mr. Wright—I so consider it.

Mr. Manley—In bees that are affected with paralysis, does the disease ever disappear without treatment?

Mr. Wright—It does.

Mr. Manley—Will it eventually destroy the colony?

Mr. Wright—That I can't say. I don't know of it having destroyed any colonies.

Mr. Manley—We have been importing bees by the carload into our State, and we have had considerable trouble along that line. I have sometimes thought it was paralysis, other times I have thought it was not. We noticed the bees in large numbers crawling over the ground and moving all over the apiary, and it would always disappear and we would usually get a good heavy honey flow. I finally thought it came from confinement on the cars. The wings of the bees were worn out to that extent that those large numbers were seen all over the apiary.

Mr. Wright—How long after the moving did you observe all that?

Mr. Manley—Possibly about three weeks. I noticed it in the clover flow.

Mr. Wright—Those were old honey-gathering bees?

Mr. Manley—I can't say whether they were all old bees or not.

Mr. Wright—I have never known of losses by it although there may have been.

Mr. Moe—If this specimen of diseased brood was brought in and I got hold of it and got my fingers sticky and I go home and handle my own combs and bees, what would be the result?

The President—Wash your hands.

Mr. Moe—According to the accounts given here will that be sufficient when neither carbolic acid nor heat always kills?

Dr. Bohrer—Do you treat a European Foul Brood similar to American Foul Brood?

Mr. Wright—Yes. If you wash your hands in a solution of carbolic acid and formalin, it will be all right, I think.

At the request of many in the Convention, Mr. William McEvoy of On-

tario addressed the Convention as follows.

Mr. Chairman and Gentlemen:—I am in an awful fix amongst scientists and I don't take too much stock in some of the scientific work, in a way, to start on, because they are mixed or confounded with black brood and foul brood or at least European and American foul brood, and to start off I will rule out the American and I will speak of foul brood. The other, I think, has a good name to leave it under, the name of black brood, because otherwise it mixes matters so. I have not been very familiar with black brood, although I have run across it, and that requires the same treatment as the other. But, go back to 1875 when my experience with foul brood was that it broke out in my own apiary. I heard there was such a thing, and in my ignorance I distributed it splendidly. I would take a comb of brood out of the diseased hive and exchange it with a strong one, and I soon found I was spreading the disease. I tried many things and I failed in curing it. At last I thought if I would take nice white combs that never had brood in and put them in the colony it would make a cure. Oh, not so simple! It gave it a great check, though. The bees are a little restless for a while. I carefully lifted the combs apart to see the queen and I saw quite a little honey here and there, and I knew they hadn't got it altogether, and I took some of that honey and I fed it to others and I gave the disease right there from that. That led to finding the honey was diseased. At that time we had no foundation, and I started with extractor, and I can cure any case of foul brood with the extractor. It is not very practical, but this was my early experiment with it. I left the combs with the bees a day for four days and I extracted each evening; then I took them away and let them gather and give another set of combs and extracted in two days more, and it was a cure. My combs couldn't last out for I hadn't them to spare. Finding that the honey was diseased, I said, Where is the disease? That is the next thing, because all the honey in the foul hive is not diseased, the most of it is sound, because if it was all diseased it would kill all the brood at once, but it wasn't. Where was the diseased brood? I took a wire and ran it across and then ran it crossways

again, and I brought the cross rods over the diseased cell; that is where they put the honey—one the crust of the old foul brood; I took a pin and I would lift that out and drop a little here and there in the larvae and every one of these went foul. I couldn't give it to the clean cells, but every time I would dip into that, especially where it was a sort of crust of the old foul brood, that honey was foul.

As my combs gave out I have shaken the bees down to let them build. It was a cure in one case and a failure in the other. Why? The one had but very little disease and hadn't much loose honey unsealed in the brood nest; the other was a bad case and they stored a quantity of it all through these cells, and it being in the honey flow, as soon as they drew out a little of that comb they stored some of it and it broke out again. When the season gave out in the fall I resorted to building. I would take a board and nail a rim around it and run wax in the joint and feed sugar syrup and let them build. Along later on in the season I found colonies that I didn't think had it, but they were pretty full of brood, and perhaps three dozen cells were foul, and to destroy that brood was going to destroy my fall and winter bees. I shook the bees off and gave them plenty of honey to winter, but there was a piece left at the bottom there; they stored some of the honey and started up business. I cut off some of these with solid honey, but some of them would build a little comb at the bottom and start again. I found out later, by letting them go till they hatched out and then shaking, that I could make the cure in that way; and I would feed the sound ones, one here and another there, and get capped stores. After I shook them all on to capped stores they had no place to put it; they had got to keep that honey and consume it, because these were sound combs.

Speaking of this pickled brood, scientists have looked for the germ. Gentlemen, that is starved brood. I have been on that for twenty-two years. That takes place in the period between fruit and clover bloom in some localities. They use the unsealed stores for feeding the larva, and they won't uncap fast enough to keep pace with all the larva that requires feeding, and the result is that some

are well fed, some are half fed, and some starved. The gentlemen who have described that starved brood have described it perfectly. On the ninth day, lying on its back, you find it turned up black, pickled as they call it. That is starved. Some of it will die after it is capped over, and you will often find a bad capping here and there, and you think, oh my, foul brood! No; that is starved. The larva didn't get enough and it died. By feeding between fruit bloom or during any check, where there is a quantity of brood feeding, you will never have the thing at all. There is one thing in favor of Italians, they are better feeders of larva than any other race I ever found. In 1869, on the 28th of May, after a very favorable spring when the brood nests were full of brood, a heavy frost took place and killed everything, and for days it came on rain, rain; the bees used up the unsealed stores, and there was starved brood everywhere all over Ontario. They all thought they had foul brood, but it was starved brood. They sent it away and some of the scientists said they didn't think it was. In 1895 we had one week in the latter end of May and two weeks in June when we had so much rain each day. Then again we found it. If you will follow up the feeding you will never have that. As far as the treatment is concerned one shake will do in many cases, but where a farmer has bees and is busy and has a very bad case in the honey flow it will not do to shake once only. If he shakes them on to foundation and leaves them sitting in the sun, some of these will swarm out the next day and mix with the sound ones and spread it; but if he shakes them on to starters they will seldom swarm, and four days after that they will be cured. Practical men can cure in many cases in one shake.

I don't know that I have anything more to say on that point than that I think if people would look closer after their bees and attend them there wouldn't be so much disease, but the trouble is by letting them get ahead and then treating.

Mr. Brown—There is one subject that has not been touched upon. A great many bee-keepers keep different watering devices in their yard, and in handling a foul brood colony, if it is badly affected, it has always seemed

to me the feet of the bee may become contaminated with the diseased matter, and, in visiting a watering dish, would contaminate the water and the whole apiary get the disease.

Mr. McEvoy—Eighteen years ago I was appointed inspector. For fifteen years before that I had been treating and I had never disinfected a hive in my life. The question was often put to me this way, how long am I to boil the hive? And my answer was, that will depend upon how long you intend to boil the bees. What, boil the bees? Yes. Surely you are not going to take these bees and just throw them all into your nice clean hive without boiling or scalding their little feet, are you? I said, never mind the hive at all. I will be responsible for it if you will thoroughly cleanse those bees of the honey. An empty hive can't give the disease. The bees do not feed lumber to the larva.

Mr. Robb—I would like to ask Mr. McEvoy, is foul brood in Ontario on the increase or on the decrease?

Mr. McEvoy—No. We had it seeded down in 37 counties, but after all that has been written and spoken it is wearing out; it will never again be bad in Ontario, if we had no inspectors at all, from the simple fact that the people understand it pretty well now.

Mr. Coggshall—Which is the most contagious, black or foul brood?

Mr. McEvoy—Of the two I would sooner take my chances and treat the black than the foul, unless the foul was thoroughly done.

— Mr. Byers—Mr. President and Gentlemen: I wish to say I agree thoroughly with our friend, Mr. Wright, when he suggested to Dr. White that he should put European foul brood first. Some three or four years ago at our Ontario Convention the question was asked, Have we got European foul brood or black brood in Ontario? We have got European foul brood in Ontario at the present time. There is no question about that, on account of its great virulence and a little difference in the way it seems to act as compared with the way Mr. Wright says it acts in New York State. In the first place where this outbreak has occurred in Ontario it only covers about ten miles square, and a good honey flow has had no effect upon it. It has increased by

leaps and bounds. Apiaries that have it in the middle of June are wiped out by September. I have seen larvae at the age of three or four days dead, just as if a blight had went over it. I am thoroughly convinced it is not through robbing alone that this disease is spread. It might be a good thing for Dr. White and others to investigate this disease. In my opinion we practically know all we need know in regard to American foul brood. I don't rush after it, but I don't dread it; it has no terrors for me, but I do dread European foul brood. Dr. White told us that practically nothing is known of how this disease is spread. I hope steps will be taken to find that out. I am a honey producer and depend upon honey for a living, and I told Mr. Holterman while I did not dread American foul brood, when I got out where this European outbreak was it made me shiver. I am not so sure as to the McEvoy treatment being as effectual with European foul brood as it is with American foul brood. I do not agree with him that it is easily treated. If he was out for one day where this outbreak in Ontario is he would agree with me that the American is not to be compared with the European foul brood as we have it in Ontario. We hear that we got it from New York State. I don't know where we got it, but the fact remains that we have got it, and I earnestly hope steps will be taken at Washington and Ottumwa to combat this terrible scourge.

Dr. Phillips—In view of the fact that spoken of the danger from European foul brood it might be of interest to get an idea as to where European foul brood is now found in the United States. As near as we know it was first discovered in New York in 1897, and in 1899 they began to fight it in that State. For a long time it was not found outside of the Mohawk Valley. As I understand, it is now found in several parts of New York State and in about sixteen other States of the Union as well as in Canada. It is a disease that is spreading very rapidly, and it will only be a very short time when, in discussing European foul brood, we will have to say it is found in every State in the Union and in every county, unless some steps are taken to stop it.

Mr. Holterman—Have there been any reports made to Dr. Phillips at Washington from any other part of

Ontario than the one he corresponded with Mr. Byers about?

Dr. Phillips—That is the only one.

Mr. Holterman—I think our Ontario Government is making a mistake. This disease was only in one or two apiaries and now it covers ten miles square or less. I think between the Provincial and Dominion Government they should at once stamp out every single apiary where this disease is found.

Mr. McEvoy—Do you treat it at all, Mr. Wright?

Mr. Wright—I have cured it.

Mr. McEvoy—Without burning?

Mr. Wright—Yes.

Mr. McEvoy—That is all right. Now, Mr. Byers, you are mistaken.

Mr. Pressler—Mr. Wright has stated that the dread of American foul brood is not as great as it was years ago if we know how to handle it. The people of New York State, especially Mr. Wright, have had considerable experience with black, or European brood. Do you dread it as much to-day as you did three years ago?

Mr. Wright—Both diseases are bad enough, but Mr. Byers need not dread even European foul brood.

Mr. Holterman—We are now touching upon a subject which is, I think, of very great importance to the bee-keeping industry, and I believe we should be thoroughly afraid of foul brood, whether American or European. I know underneath the surface I have been blamed for spreading foul brood. There have been two cases where, in a mistake years ago, I sold foul brood to other parties and then made it right as I best knew how. I am afraid of foul brood. I never had a serious attack of it, but I have occasionally had cases, and from what I know of it from my own experience, and from what I have seen a great deal more in others, I would say what every bee-keeper and bee journal wants to do is to make every person thoroughly afraid of it.

Dr. White has said that there are cases where we cannot control the causes, as it were. That is, if my neighbor has foul brood the stronger my bees the more likely I am to have the disease. I have somewhere like four hundred colonies, and I have said time and again that if the disease should break out to any extent in my apiary I would simply throw up the

job; it would cost me thousands of dollars to cure that disease, and therefore I have very good reason to be thoroughly afraid of it. With all due respect to these gentlemen who have spoken, and whom I agree with in many things, I do not agree with the sentiment of not being afraid of the disease known as foul brood.

Mr. McEvoy—On this question of treating the disease, if you have got a lot of nice white comb over diseased colonies, and these have wire foundation, they are very valuable, and you do not want to destroy them if you can help it. If you have been afraid of foul brood, turn the cloth back and let the bees clean those combs out clean and dry, and they will be perfectly safe, and the greater amount of combs of that kind that can be saved the greater quantity you will get; but where an old comb has had a cell of foul matter in it, it will stay there as long as the comb lasts.

Mr. Pressler—Does this apply to both American and European foul brood?

Mr. McEvoy—Yes.

The President—Perhaps we can save some discussion by taking the next paper and then taking up the discussion of this whole matter. The next paper is "Getting Rid of Foul Brood with the Least Financial Loss," by the Hon. R. L. Taylor of Lapeer, Mich., Inspector of Apiaries for Michigan.

Mr. Taylor—The subject has been talked about so much that I had got rather tired of it and I presumed most of you had. My topic is how to get rid of foul brood with the least financial loss. I think the first thing everybody ought to attend to, who has foul brood or fears he may have it, is to get thoroughly acquainted with it and with the description of it. I have been surprised at men coming to me and wanting to know about something that had happened in the combs of their bees. Some had dead brood and wanted to know whether it was foul brood or not. They had read all about foul brood, the descriptions of it, but they couldn't tell whether the dead brood was afflicted with the disease or not. The descriptions are plain enough. There are 1,000 of them, and they are every one plain enough so that anybody with any intelligence can understand when they see a case of foul brood. The trouble is that bee-

keepers do not sit down and study the description.

Now, as was intimated by someone here, the price of freedom from foul brood is eternal vigilance. We are not going to get entirely rid of it because it is in the woods, and bees die in the woods, although I have heard some say that a colony in a tree never dies, but it is pretty certain they do, and they surely would when they had foul brood, and we will get it from the woods and from two or three colonies here and there out in the country perhaps that we never have known about where the owner takes no particular interest in them and does not care whether they die or not, and does not care whether they are robbed out or not when they do die. That, I think, is the point of greatest importance.

Now, as to avoiding financial loss otherwise. You understand the loss may consist in the loss of the bees or the hive or the honey. How shall we proceed in order to save this property? Sometimes the bees will be found to be worthless when you discover the foul brood. When they get so weak that there are about a handful of bees left, they are almost entirely old bees, and the quicker you can destroy them the better. There is no financial loss in that. The hive is safe to use again. There is no financial loss in that. But sometimes we find foul brood colonies that are of considerable strength. You may discover in your apiary a half dozen or dozen colonies affected with foul brood. How are you to dispose of it? In the first place, you want to understand thoroughly just what you have got and the condition of each colony. Then you want to lay down a plan as to how you will proceed. If your colonies are strong there is a way to get rid of it without much danger and I think with perfect safety so far as the new colony is concerned; and that is Baldrige's plan of using a bee escape. You prepare a hive for your colony with starters or foundation and place it upon the stand of the colony that has the foul brood, setting that one a little aside, putting the entrances as nearly together as possible; then take sufficient bees out of the foul broody colony and put them in the new hive with the queen to make a start—sufficient bees to take care of the queen at least—and then put up a bee escape upon the front of your hive, having it in every other way perfectly

bee tight. Then you have nothing more to do but to let the bees come out of themselves through the escape, and if you place your escape properly they cannot return to the foul brood colony but go into the new hive. Mr. Baldrige uses that and says it is always successful. I have used it in several instances and have found it successful. There are other cases where some of them are rather weak. There may be a considerable number and you may want to cure them by the shaking method. Provide your hives for as many colonies as you desire to make out of the diseased ones, which will generally be somewhat less than the number which have the disease, because a good many of them, unless in a very favorable time of the year and early, will not be sufficiently strong to build up into a good colony. You want to make the new colony sufficiently strong to build up. You select from these diseased colonies one or two colonies, if your brood is worth anything, upon which to put the brood that you take from the rest of the diseased colonies. Then you shake off the bees into new hives, taking such colonies as you think will do best and setting the brood from which you have taken the bees upon one or two of these diseased colonies and allowing it to remain there a week or two so that a good deal of the brood, the healthy brood, in these diseased colonies will be saved.

Now, I think these methods, with an intelligent understanding of the dangers of handling the disease and of the danger of weak colonies being robbed, will be sufficient, and those colonies upon which the foul brood has been put of course will be treated in a week or two afterwards the same as the previous ones were treated.

Mr. Holterman—Would you cage the queen in these colonies that you put the brood on?

Mr. Taylor—I would shut her below. I have never caged her, but I confine her to one part of the hive.

Mr. Moore—What would you do with the combs?

Mr. Taylor—If I had conveniences for taking care of the combs so that I could be perfectly sure they could be cared for without the bees getting at them, I would boil them up and get the wax out of them. But if I had a colony that had been cleaned of foul brood and I discovered an infected

comb or two the best course would be to burn them right up. Burn them or bury them unless you have conveniences in which you can take care of the combs securely. There is where the danger comes.

Mr. Holterman—If you had 100 colonies would you do that?

Mr. Taylor—It would depend on the man. A good careful man could save his bees and save the wax in the combs. If he was not a careful man he had better burn them up.

Mr. Lewis—Mr. Taylor says put the diseased brood over a queen excluder. Now, I have tried that with four hives and have had two of them block up the escape so that the bees above smothered to death.

Mr. Holterman—Were there many drones in your brood?

Mr. Lewis—No, it wasn't from that cause.

The President—Did you use a bee escape?

Mr. Lewis—Yes, a regular bee escape. That seemed to be all filled up with cappings and then the bees had crowed in and blocked it right up so that it was just solid and the bees were dead. Now, take a good clean comb that never had foul brood in it, but that had honey from a foul brood hive below, and above a bee escape. I had one hive of that kind and I wanted to save that comb badly. How I could get the honey out that remained in those combs after extracting was a problem. I saw that every cell was uncapped on both sides of the card; it was about two-thirds full above when I discovered the old hive was full of foul brood. So I took them one by one and I soused each card up and down in water, turning it over and throwing the water out three times in succession. Then I sunk them in water over night and then threw them out, and the next morning put them up to dry in my bee house, and before they were quite dry a large colony of bees came out and I put them right into that hive and they have been there four years without any sign of foul brood.

Mr. Taylor—What did you wash them out for?

Mr. Lewis—To get the honey out.

Mr. Taylor—It was brought from the fields?

Mr. Lewis—Yes.

Mr. Taylor—Well, that is always safe.

Mr. Williams—Mr. Taylor speaks of using the hives again. Does that include using the frames over again?

Mr. Taylor—I have. If you boil them thoroughly I consider it safe.

Mr. McEvoy—Yes, perfectly safe.

Mr. Taylor—In fact I think it would be safe without it in the majority of cases, because the foul brood does not go up to the frame and if I cut out the combs I would not be much afraid to use them just as they are.

Dr. Phillips—It seems to me that this discussion has missed the whole point in the financial treatment of bee diseases. If we are going to eradicate bee diseases from the country or state or continent, it must be done by a modified method of manipulation. If a man goes on producing honey, as we have been taught to do since the honey extractor was brought in, the bee diseases will be very hard to control; but if we modify our methods so that wax production becomes a part of our manipulation, bee diseases will no longer be a serious proposition. We have been led to believe that the combs may be used and should be used year after year. Bee-keepers have been led to believe that wax production is not profitable and a little figuring on this thing will demonstrate that such is not the case. A colony of bees does not consume fifteen or twenty pounds of honey in making a pound of wax provided the extractor that is used is of the right kind. If a colony of bees is shaken from its combs or swarms from its combs and is started in a new hive the amount of honey used in producing a pound of wax is far from being fifteen pounds. It is very low. We have a fresh writer who is very competent to write on the subject, who has put this figure as low as two pounds. It does not cost fifteen pounds of honey to get a pound of wax. Now, if we utilize this point if we modify our manipulations in such a way that we compel the bees to build wax by shaking we will make almost as much money from wax as we did before from the old method. The shaking treatment I believe is the only treatment worthy of consideration. If we allow the bees to leave the combs by the use of the bee escape they go out without the stimulus which they should have, and do not

secrete wax anything like as fast as they do when shaken, and under those conditions wax is secreted at a very much less cost.

Something has been said about whether it is desirable to save beeswax or not. That also goes into the loss question. If we are to have any hope of success with the eradication of bee diseases, we must save this wax and save it all, or the bee disease treatment cannot be carried on as a financial success. A colony in a ten-frame Langstroth hive contains over four pounds of beeswax. At 30 cents a pound—that is higher than the average bee-keeper gets—the average bee-keeper with an ordinary wax press cannot get very much over three pounds, but there is over four pounds there—but figuring on what he gets, that is 90 cents, that two story hive contains \$1.80 worth of beeswax, and it does not pay to throw it away, because any one who is worthy of the name of bee-keeper will take care of that and see that it is not robbed out.

In the eradication of bee diseases we must look to the method of treatment which the successful and careful bee-keeper can use. There is no use in trying to get a method which all bee-keepers can use, because the time is going to come when all bee-keepers cannot continue to keep bees. The time is going to come when bee diseases are going to wipe out about 50 per cent of the bee-keepers in the United States.

Mr. Byers—Just a word in regard to what Mr. Taylor has said and criticizing whether the super combs should be washed out. He says he thinks they would not have transmitted the disease if they had not been washed out. I do not know positively that when you put super combs over a foul brood colony that never had it, they will transmit the disease.

Dr. Bohrer—In connection with what Dr. Phillips has said I would like to call attention to another matter that has not been named. I don't know what protection you people have in Canada in the way of legislation, and I don't know what the different states outside of my own have in the way of legislation, but I do know this, it is very defective. I intend to formulate a bill on my return home providing that the Bee Inspectors of the different counties shall not permit colonies of bees to remain in any man's

house or barn when known, and shall not allow men to keep bees in boxes or ordinary box hives. As long as you allow them to do it I do not see how an inspector can do his duty, nor see how we are going to stamp it out and keep it stamped out. In heavily timbered sections of the country you may provide that all trees containing bees may be cut down and the bees taken out. We do need legislation against allowing bees to remain in houses and barns and other out-buildings and being kept in box hives or logs. I make the suggestion that all bee-keepers consider this.

Mr. McEvoy—We have a clause in our Act whereby we can order all box hives changed into frame hives where they are diseased.

Dr. Bohrer—How about bees in houses or trees?

Mr. McEvoy—We have nothing to do with the trees; I suppose we could have, though.

Mr. Lewis—I would like to ask what we would do in that case, after we have ordered all the bees to be put into frame hives, when the people will let hundreds of these common farmer bee-keepers build combs crossways of those frames.

Mr. McEvoy—They can transfer them all the same.

Mr. Richardson—I would like to ask about this treatment of Mr. Taylor's in changing to the new hive when disturbing that diseased swarm and they would fill up with the diseased honey, wouldn't they carry the disease into the new swarm?

Mr. Taylor—They may carry some, but they get rid of it before they get comb built to store it in.

Mr. Richardson—They would use some of that diseased honey to build some of that comb?

Mr. Taylor—No.

Mr. Friess—A gentleman over here has spoken about washing his combs out. Why couldn't the bees in increasing their brood below carry that honey from below and put it above, and would it be safe to use that?

Mr. Taylor—I don't think there is any danger in that.

Mr. Friess—Don't you think the honey from below would contain these germs after being carried above?

Mr. Taylor—I don't think they carry any above. The conclusion I have

come to is that combs which never have had foul brood in are safe to use.

Mr. Friess—Does not the good honey below become infected by the foul brood honey?

Mr. Taylor—No, it is because they store honey in cells that have the dead brood in.

Mr. Friess—Will they remove that up above?

Mr. McEvoy—Yes; some times.

Mr. Newton—I have not been so much interested in the work of foul brood until the past year. As I have been passing around from yard to yard, I have seen people have been too lenient altogether. They want to save these few combs. It is the thought of saving these top combs that are over diseased colonies. I wouldn't advise anybody to do that. I think we should be very much afraid of it.

Mr. McEvoy—Johnnie, would you destroy the combs over a diseased colony?

Mr. Newton—Yes, I am so much afraid of it.

Mr. McEvoy—You are dead wrong. (Laughter.)

Mr. Newton—In the past season I have found people who have used these old combs thinking they were safe, and the disease has broken out again. Wouldn't it have been better if they had resolved in the first place to cure and get rid of the old combs? Mr. McEvoy and myself and many experienced bee-keepers might save the old combs to advantage, knowing what we were doing, but when you come to the inexperienced bee-keeper, and he does not know the combs as well, and he uses combs which he thinks are all right in his own judgment, but when the season comes on in a good many cases the disease will appear again, and for the sake of others I say do not use any old combs or anything in connection with hives that have been diseased.

Mr. Manwaring—We have been told by Mr. Taylor and others that it is safe to use hives in which foul brood has been found. I would like to know whether that is the universal belief or whether there is any exception to that. I understand from Mr. Taylor that all that is necessary is to clean out an old hive and you can use it again.

Mr. Taylor—I can't tell what the general belief is, but that is the belief in my house.

Mr. Pressler—We have enough men here who have tried it and know it.

Mr. McEvoy—In my 33 years' experience I never had a case of foul brood develop in an old hive, and I never disinfected an old hive.

Mr. France—I am not as old as Brother McEvoy across the water, but I have put in twelve years of inspecting and treating diseased bees. In the first year I boiled the hives, and if ever I saw anything that was sickening to a bee-keeper, it was a lot of boiled hives; they all warped out of shape and I found they were no use, and in later years no hives have been boiled or burned and they are all in use to-day.

Mr. Holterman—I am not going to say it is necessary to disinfect hives. Mr. S. D. House of Camillus, New York, stated to me distinctly that his father attributed a second break-out of foul brood to the fact that the hives had not been disinfected. I want to say Mr. House had no conclusive evidence that the reason was because the hives were not disinfected. If we are going to learn we must be open to reason, we must judge wisely and be unprejudiced. On the other hand, I want to make the assertion that because hives have been used for many years and not disinfected does not prove that the disease may not have been transmitted in that way. We know where colonies are treated for foul brood the disease does break out occasionally the second time, and the man who believes that combs do not need to be disinfected and can be used the second time will say that that was not the reason why the disease broke out, but it was on account of some other cause. At the same time I want to say he does not know. Where the disease does break out occasionally the second time—and every inspector and every one posted in this line knows it does—he does not know that it may not be because the hive was not disinfected. I think Dr. White and Dr. Phillips are men who should be able to speak with authority upon the subject of boiling hives, because they are bacteriologists and they can follow it up in a practical way. The bee-keeper cannot. To disinfect a hive it is not necessary to boil it. The germ may lie upon the surface

and all that is necessary is to wash it with some disinfectant, and that is the reason why I believe it wise for a person to advocate disinfecting hives. It costs so very little to do it.

Mr. Taylor—If you want to disinfect hives at all, put a little straw and kerosene in it on a pile of hives and touch a match to it, and when it is sufficiently scorched inside put on a cover and that will put your fire out. Fire will attend to the bacteria, you needn't be afraid about that.

Mr. Darby—Mr. Taylor just made the point I was going to drive at. There are cases when I think it is necessary that the hive should be disinfected. Some of us have to deal with bee-keepers, different classes of them, some who will do work properly and some who will not do it properly, and it is with those that are careless that we have got to deal and with whom the most trouble comes. Sometimes I find combs built crosswise and sometimes run together and in treating them the parties will be so careless as to drop the honey in the hive and on the bottom board and on the side and on the cover. These are not careful bee-keepers. You are talking to intelligent people in this audience, but remember there are people all over the United States and I presume in Canada, who are not careful and who are not intelligent on this line, although they may be on others. What should we do with these hives? Take them and put other bees into them? As Mr. Taylor has just said, in those cases I tell them to disinfect the hive, but my method is to paint the hives with gasoline and then apply a match, and the work is done in a few minutes. All the burr comb in there, all the honey, all the glue will catch it and these diseased germs will instantly be burned up. I think we should bear in mind that there are a great number of people who will read this report who are not as familiar with handling hives as we are here, and we should consider this matter and let these reports go out so that it is clear enough to all minds how this subject should be treated. Do not take chances. (Applause.)

Mr. Cavanagh—I don't feel quite satisfied in regard to this hive disinfection. There certainly is a possibility of infection in those hives. We will suppose a small portion of that diseased brood were simply on the inside of that hive and that hive after-

wards had some honey spilled on it and the bees cleaned it up, why wouldn't that condition be exactly the same as if the bees cleaned the honey out of the diseased cells that have that scale dried in it? While it is very easy to disinfect those hives and make them perfectly safe, that danger might exist if they were not disinfected.

Mr. Covyou—As to the possibility of spreading the disease, I think the bottom board is the only possible place where these spores might fall and be covered up. In a year or so if you should disturb them in scraping your bottom boards, it might possibly affect the bees.

Mr. McEvoy—A gentleman over here spoke of some honey being spilled or dropped in the hives. What is the difference whether the bees have it in their sacks or clean it up there a short time afterwards?

Speaking of painting hives, I would want to paint the feet of the bees; one is as necessary as the other. When it breaks out again, it is something like the old lady with her hens, they were off the eggs and on the straw.

Mr. France—I am sorry to see we are trying to save too much infection for fear we will lose a little something. I don't consider an infected colony of bees worth very much. All they are worth is the wax. I do thank Dr. Phillips for bringing out the point that from a commercial point of view we are foolish to stand in our own light and try in some kind of way to save an old infected comb. For nine years I have carried with me as an inspector, free of charge over our State where the bee-keepers did not have facilities to save the wax, a wax extractor, and the old combs melted into wax almost in actual value paid for the foundation, and those new combs put on were worth much more than the old ones. In that way the bee-keeper got rid of the old combs, the drone combs, and he had new clean combs which gave more ambition and vigor to the bees. Then, why are we dabbling over these when we could dispose of them and make a clean sweep of them?

Mrs. Robertson—How long in the name of science do these foul brood germs live? Forever?

Dr. Phillips—Dr. Maassen in Germany had foul brood twenty years old

and he had no trouble in getting germs from it.

12 o'clock noon adjourned to 2 o'clock p. m.

SECOND DAY.

Afternoon Session.

Wednesday, October 14th.

At two o'clock p. m. the President called the Convention to order and said:

"We have two or three gentlemen with us who have come a long distance to attend this Convention, one from Cuba and one from California, and we feel we would like to hear from these gentlemen. If Mr. Gilson from Cuba will step forward and give us a little history of things there and particularly in regard to Rambler, that we all know something about, we would be very glad indeed."

Mr. Gilson—I was with our friend Rambler for about six months of his life. He was sick at the time and he finally went to Havana to the hospital, and I of course did not see much of our friend, although I found him a very genial fellow with a kind disposition and, being new in that part of the country, I certainly felt having a friend leave me like that.

As to bee-keeping there, they keep a great number of bees and large apiaries.

Mr. A. I. Root—How many colonies did Rambler have at the time?

Mr. Gilson—He had about 300; they were in a swamp. I believe Mr. Root was there at the same time. He had a good place for honey, but a very poor place for health. That is, the water was not good and it was low land, causing it to be very unhealthy. As you all know he took the fever and went to Havana and died while Mr. Root was there. At one time we took about nineteen bocoyas—a barrel is a bocoya, with 200 gallons to the barrel from the apiary of Rambler. That was comb honey, and we did that the year I went there. There was some taken before I got there, so I don't know how much there was altogether.

Mr. A. I. Root—This boy (Mr. Gilson) had full charge of that apiary.

Mr. Gilson—After that I took charge of the apiary. It was then sold and I stayed for three and a half years. At the end of that time it was still running for extracted honey.

Mr. A. I. Root—How many colonies can they keep there in one place?

Mr. Gilson—Anywhere from 300 to 500, although I never had more than 336. I have seen 300 colonies produce about 250 pounds to the colony. We must remember that they have fully eight months of harvest there. It is not a fast harvest like ours is here, but it is continuous almost. There are slight breaks in it of course.

Mr. A. I. Root—They sometimes have a little foul brood?

Mr. Gilson—Yes, but I did not have much experience of that. The most of it I have found with other men. I have seen where whole apiaries were wiped out of existence with foul brood, and the hives piled up like so much cordwood. I think it comes from entrusting it too much to native help. The most of our bees were entrusted to the native help and they did not understand bees; they were just like a machine; simply did as you told them.

Mr. Holterman—They were not afraid of foul brood?

Mr. Gilson—No; when they didn't know anything about it.

Mr. A. I. Root—I visited one apiary where a native was driving out foul brood with brimstone; he supposed brimstone would kill anything. (Laughter.)

Mr. Chapman—About how much per pound does the honey average?

Mr. Gilson—I think we got at the highest, 48 cents per gallon. They simply run a measure down in the barrel and measure it the same as you would wine.

Mr. A. I. Root—They send the most of their honey over to Germany to make beer.

Mr. Gilson—I guess the most of it, the bakers get a portion of it.

Mr. McEvoy—What percentage of this honey is marketed in the United States?

Mr. Gilson—I don't know.

Mr. Evoy—How much is shipped to England?

Mr. Gilson—I don't know. Germany gets a great quantity of it.

Mr. Kilgore—What is the quality of the comb honey produced?

Mr. A. I. Root—Some of it is very fine, equal to almost anything we have here, but the most of it is not up to

it. There seems to be a difficulty in producing comb honey.

Mr. Gilson—After you get it very nice and clear, if it is allowed to stand down there any length of time it ferments and bursts the capping off.

The President—Is Mr. Witham of California in the audience and will he please come forward and give us a little talk?

Mr. Witham—Mr. President, Ladies and Gentlemen of the Convention: I am really glad to see the ladies. I know there are a great many ladies engaged in the bee business. I am glad to be at this Convention, the first convention I ever attended pertaining to bees. I am somewhat of a new beginner in the bee business and therefore I hope I will not be subjected to any very serious questions.

The President—We will be easy on you.

Mr. Witham—My experience with bees has been very limited. I don't know what is going on in the State even. I know what is going on in my immediate vicinity. I want to tell you how ignorant I am in regard to bee diseases. We have an inspector in our county, and I thought I had diseased bees last spring, and I told one of my neighbors who had some bees about three miles away that I believed I had foul brood, but I didn't know it. He sent immediately to Monterey, where the inspector lived; he came down and examined my bees and my neighbor's. When he came to my apiary he says, I was told you had foul brood in your apiary, but I find none. I thought I had. He said: You have got none, but your neighbor that told me that you had, hasn't got but three sound colonies. I said he didn't do that maliciously I know, for I told him I thought I had it.

You know California is a great place for big things, and I presume Mr. Root knows something about that as well as myself. We raise a whole lot of honey there, especially in the southern part, but some times we have to get out there because it is a little too dry, and I guess this season was a poor season, but another gentleman and I, in Santa Barbara county, had some honey. I got four and one-half tons out of 85 hives. There were some ten apiaries that didn't have a pound to sell. If any gentleman here can tell why that is, I don't know, but that is the case. We raise good honey there. The sage honey is a splendid honey.

Mr. A. I. Root—Water white?

Mr. Witham—Not always. Our first honey is water white. I am not posted at all in this business and I have come here to learn, and I am glad I am here to hear the pros and cons about bees and diseases, and so forth. I have come to learn and carry back to the West what I can possibly learn here about bees. All my practice and theory that I get, comes out of Illinois and Ohio and some out of Michigan. I see they are all represented here. (Applause.)

The President—Taking up the regular program for the afternoon, the first thing is a debate on the following: "Resolved, That an Eight-Frame Langstroth Hive is Preferable to a Larger Hive in Extracted Honey Production." The affirmative is to be taken by Mr. S. D. Chapman of Mancelona, Mich., and the negative by R. F. Holterman of Bradford, Ont. We do not want it understood that this discussion is to be a discussion pitted between these two gentlemen. We want it understood we are going to try to draw out the facts so far as we can as to the advisability of these two sizes of hives, and the judges will render their decision in accordance with the evidence that may be given by these gentlemen and by such discussions as they may draw out.

Mr. Muth—Who are the judges?

The President—Mr. R. L. Taylor of Lapeer, Mich., and Mr. F. J. Miller of London, Ontario. Are they all right?

Mr. Muth—Mr. Taylor is all right. I don't know the other man.

Mr. Pressler—It is not likely that a man is prejudiced in favor of the hive he uses?

Mr. Holterman—I know Mr. Taylor is an eight frame hive man, but he has a fair mind, he has a judicial mind, he is a lawyer. We want everyone to be fair-minded in the same way.

The President—The decision will be rendered upon the evidence given and we must give these judges credit for being fair men.

Mr. Chapman then addressed the Convention as follows:

Mr. President, Ladies and Gentlemen:—Some time ago I received a letter from our Secretary stating that all the best men had refused to take a part in this Convention. He wanted to know if I would not come and take a part in a debate showing some of

the good points of the eight-frame hive in the production of extracted honey.

In starting this discussion, let me say in a few words I could tell you why I prefer the small hive for my locality. But when we take into consideration that bees are kept throughout the American continent, in nearly every place where agriculture is carried on, from the northern limits of the United States to the Gulf of Mexico and from the Atlantic to the Pacific oceans, taking in the vast area with its varied climates, it is no wonder there is a difference in the opinions of bee-keepers in regard to the size of the hive as well as the different kinds of management required in each locality.

My experience is limited in regard to localities. For the last 27 years I have been keeping bees in the northern part of this State, and it is a cold climate. Our summer season is short, and it is for such a locality I prefer the small hive. Though, after thinking over carefully the subject of hives, I do not know that I will be able to say much about the small hive. But if my opponent discusses this question in proportion to the size of the hive he uses, we may expect something.

The bee-keeper who depends almost entirely upon the income derived from his bees for the support of his family will soon find there is something more than the size of the hive to take into consideration. Every hive must have its system of management. It is inseparable from the hive itself. It is this that makes bee-keeping a science—one of the grandest pursuits that God has given us.

The more careful study we give the subject the broader the field for investigation. The careful observer while working with his bees often may be able to accomplish greater results with less labor.

In the last 50 years we have made wonderful progress, but we should not think we have reached the goal. There is plenty of room for advancement. This will come about through careful observing bee-keepers—those that work in harmony with the natural laws governing our pursuit.

To discuss this question in an intelligent manner it will be necessary to start at some time during the season and show the use we make of the hive for the whole year. After our

colonies are on the summer stands it is the most important time of the whole season's work to bring our colonies up to the desired strength.

And now I wish to show you where the eight-frame brood nest has some advantage over the twelve. The bees as well as ourselves are subject to the conditions of the weather, and these outside conditions are beyond our control. You place a man in a small room with a stove just large enough to keep the room in a comfortable condition. If a few feet in length were added to this room, the result would be this: he would suffer with the cold unless he drew heavily upon the fuel. Just so with a colony of bees; they give off but a certain amount of heat, sufficient to keep the colony in the small hive comfortable, but in the large hive it is necessary to draw from their stores; an extra amount of fuel must be consumed to keep up the desired temperature, and all this is at the expense of the vitality of the bees. That is the point.

Take two colonies with equal stores the first of November. Winter one in the cellar with even temperature, the other on its summer stand where it is subject to all kinds of weather, and you will find that colony will consume about double the store the one will wintered in the cellar. If there is a difference of seven per colony, one 500 pounds there would be \$250 worth of honey saved just in the wintering.

There are many things to take into consideration in building up our colonies in the spring. As I have said, the building up of our colonies in the spring is the most important work connected with our industry and many conditions must be present in order that a colony may make good progress. First, plenty of stores. The colony with plenty of sealed honey will fare far better during a severe cold spell of weather than the colony with scarcely any honey. Sealed honey is to the bees what the stove or furnace is to the human family; it retains the heat, keeping the temperature inside of the hive in a more comfortable condition. Second, we must have plenty of healthy bees to furnish the warmth and give support to the queen. We should never believe the queen is the mainspring of the colony. What good is the mainspring to the watch without power to run it, and what good is the queen to the colony without

plenty of bees to support her? The bees are the power. Plenty of good healthy bees in the spring while building up makes good queens.

I take the position that the eight-frame hive is better in the production of extracted honey than any large hive, for the reason it is better adapted to the building up of the colony in early spring, and when the colony is heavy or strong enough to cover the combs they are in a position to out-strip a colony of equal strength in the large hive. But to do this we must have a system of management to bring about the desired results.

With my experience in running for extracted honey I would say I should expect the same working force. In the Aspinwall hive would gather and put in a marketable condition 50 per cent more comb honey than any other hive in existence.

In running for extracted honey we get the same results. First, by handling frames and later by handling supers. When we put those two combs above we started the bees to work immediately in the upper story. If we simply set the upper story on, letting the bees take possession when they are ready, we lose from 3 to 5 days, and if it is from 5 pounds to 20 pounds per colony, the scale shows this. The point is right here—it takes bees too long to become acquainted with a change in their surroundings.

The bee-keepers using the small hive will have a working force of 20 or 30 per cent more bees than the one using the large hive; and why? Because the small hive admits of management at just the time required for the rapid building up of the colony.

The colony in the large hive will build up to a pretty fair colony at about the time the white clover harvest is over and you have got those bees on your hands as consumers.

I have had men owning hundreds of colonies ask me why I raise those two frames of brood above. Their experience is all on the outside of the hive.

I will try to make this point plain. First, the colony will be from 3 to 5 days ahead of where it would be if we let the queen go up when she is ready. Second, we break up a crowded brood nest in a moment's time. A crowded brood nest is a break well applied. It retards the queen's laying and largely stops the storing of honey.

You will see this principle in use in the Aspinwall hive, it prevents the crowding of the brood nest in a hive for comb honey. At the same time we place two empty combs in the middle of the brood below just where the queen can do her best.

Those two combs above are in a position to take advantage of the heat that arises from the brood nest below, and from this on this upper story has all the advantages in the world for rapid building of the colony.

There is no cold draught of air between this upper story and the brood nest. We use the same heated air in this upper story that arises from the lower story and we have much more of it.

From this on we have a brood nest of 16 frames and this is large enough for almost any colony. But for the next 18 hours we find the queen, as well as most of the bees, have abandoned these outside combs.

Of course, the conditions of the weather will have something to do with it. If those combs in the middle of the brood nest are already filled, and they certainly are, the queen is idle more than one-half of the time. In the large hive you are reducing the size of the colony you should have. "Can you see the point?"

Here is the advantage in the eight-frame hive; from this on the expansion of the brood nest is above in an upper story just where it should be. We take two frames of sealed brood from the brood nest and they are placed in the upper story so that they are the two middle combs in the upper story. Now is the time we wish to get all the bees possible to take advantage of the honey flow. The question arises, where will the queen do the best work? In what part of the brood nest will she deposit the most eggs in a certain length of time? I will answer by saying, right in the middle of the brood nest.

Here is a point I wish you to bear in mind. The larger the brood nest, or extracting super, the more compact and closer will the bees cluster during cold days and nights. That is a fact. In the large hive the expansion of brood must necessarily be in the outside combs. The queen will make use of these outside combs possibly five or six hours during the middle of the day.

There is another objection to the

large hive. Every pound of honey we carry over beyond the requirements of the colony is a nuisance. Even with the eight-frame hive many of my colonies carry too much, and in my ten-frame hives it is a serious objection.

After Mr. Chapman had concluded his opening address on the debate a short recess was taken for the purpose of having a photograph taken of the Convention.

After recess the President called the Convention to order and appointed the following committees:

Committee on Resolutions: Messrs. Huber C. Root, Medina, Ohio; J. L. Byer, Mount Joy, Ont.; and O. L. Hershiser, Buffalo, N. Y.

Committee on Exhibits: Messrs J. Hoffman, Wisconsin; R. L. Holecamp, Missouri, and William McEvoy, Ontario.

The President—We will now take up the program. Mr. R. F. Holterman of Brantford, Ontario, will respond to Mr. Chapman.

Mr. Holterman—Mr. President, Ladies and Gentlemen:—The subject we are dealing with is one of principles, not men, and in a debate when you admit a principle, then the one who brings forward that principle has scored a point, and in dealing with the subject this afternoon I feel strongly upon that subject because I do consider it of very great importance to the bee-keeping industry, and I will try to treat it in part at least in that way.

Now, it is not a matter of how we present that subject, the tone in which we speak, or anything of that kind; it is a matter of whether we score points or do not, and the gentlemen who are judges, and you who listen, I know from what has been said, will try to free yourselves from all past ideas upon that subject and simply weigh what each one says.

Now, if I were to present you with a hive which consisted of twelve or eight combs, one strung out behind the other, there is not one in this room who would accept a hive of that construction; and if I would ask you why, you would say, if you said rightly, that the bees when clustered would cover the least possible amount of room, because in that way the largest number of bees are presented to the outside, and a cluster, if we can call it a cluster, strung out in that way

would be an extravagance, and the moment you admit that principle you admit the great principle that no hive is rightly constructed unless it is a square, because if your cluster is longer than it is wide, and you admit the principle which I have admitted, you can't cover the greatest amount of brood with the least number of bees until your hive is as broad as it is long. We find that in the twelve-frame Langstroth hive it is almost a square. If you space it in the ordinary way it is a square, and if you take an eight-frame hive you have one longer than it is broad.

Next, we all know that when a man builds a house and he builds a square house he has the greatest amount of room for the least outlay of material; and when we build our hives we can house the largest number of bees for the least money by having a square hive. That is, if you take an eight-frame hive, the length of it is the same as a twelve, and when you go to the twelve frame, the question of added expense is the added distance of the bottom board and the added distance of the cover, and therefore you can with greater economy use a square hive.

Now, my friend Mr. Chapman has spoken of using the super to put brood into. I thought that he would use that argument, and I am inclined to believe that that is the best possible use that can be made of an eight-frame hive. But when it comes to economy, with a twelve-frame hive I can retain my brood chamber and not put a super upon that hive until I have twelve combs covered by the bees. In using an eight-frame hive, just as soon as there are more bees than can be kept in the eight-frame, then the super has to be put on and the added room has to be given, which practically is sixteen combs. So that up that stage I can have twelve combs, but as soon as he requires more than eight he has to put on his super.

Next, the normal or natural way and the best way in which bees work is to have the brood underneath and the honey on top. I have spoken of using the square hive. The natural place for pollen and honey is above the brood. The argument has been used that by putting brood in the super you can get your bees into the super better. Ladies and gentlemen,

I want to say that any man who cannot, with a Langstroth hive, where the natural tendency to form a round cluster, as it were, in every direction, is upward (and we are speaking of the production of extracted honey) get the bees to go into the super when the drawn comb is there, that colony has no use for the extra room and you had better not give it to them.

Next, when the brood is put in the super you are putting your brood combs into what is rightly the extracting super, and that which will eventually be an extracting super, and it is always bad practice (sometimes we have to do it) to use brood combs for extracting purposes, and therefore that is a disadvantage in the manipulation which has been spoken of.

Again, in tiering up if you use the super to put brood into then you have to use so many supers in addition to that, and where I use a twelve-frame brood chamber and then use upon that two supers, the man who uses an eight-frame hive in order to have the same room has to tier those hives and by the time he gets to the fifth or sixth tier he finds great difficulty in manipulation.

The next thing is, that any man who would have any one working for him or would make him walk, drive or ride a distance greater than is absolutely necessary, is not working with economy; and one difficulty with beekeepers is that in production they are not aiming sufficiently at cheapening production; and if I want to cheapen I am not going to make my bees climb through into four or five or six supers, but by using a twelve-frame hive, a twelve-frame brood chamber, and putting two supers on that the bees haven't got anything like the distance to go as they do where they have the eight-frame. The front of the hive is the place where every one ventilates. Bees do not get sufficient ventilation as a rule; and where you use the eight-frame hive and only have the entrance as a ventilator the bees do not get anything like the same amount of ventilation that they get with a larger hive, and particularly is this true where the room is added in the supers.

Now, as to the tendency to swarm. I had a man try some twelve-frame hives, and after he got through he said to me, they swarm sooner than

the eight-frame hives. I asked him how he used them. He didn't give them super room, and let the eight-frame hive swarm when it would in the brood chamber and the twelve-frame when it would, and I at once admitted to him that the twelve-frame would; and why? Because in the fall of the year where you use a twelve-frame and where you examine them you have a large number of bees in the fall of the year. Mr. Chapman has rightly said that what we wanted all the time was large or strong colonies. I quite agree with Mr. Chapman upon that subject. In the fall of the year with the twelve-frame hive there are more bees in that hive than in the eight-frame, and therefore they go into winter quarters in that way, and if they winter equally as well they come out stronger in the spring and they, of course, have so many bees to begin with in the spring of the year and they can look after more brood, and, of course, they will swarm the sooner. But what we can do is manipulate it in this way; we can give them the room. I don't say a twelve-frame hive alone prevents swarming, they will stick together more and give better results.

You and I know when we see a swarm of bees hanging upon a tree, if the swarm is small, if they can get enough for the winter and build up we are satisfied. When we see a large one we say that is a stock that is going to give us returns and success in bee-keeping. To make the most out of the conditions and environments which we have means to always keep a strong colony and have your dish turned up the right side for porridge when it runs every time.

Another point is that where people are indifferent in bee-keeping, where they often depend upon the bees having sufficient stores, where they let them swarm; other things being equal, where they have allowed them to swarm—particularly is this true where the stock has been depleted—there is a better chance of the bees having enough honey for winter than in the smaller hive. That is by no means admitting that the extra room is used by the bees for storing honey, for such is not the case. What I find is that what the bees hold of the brood at the beginning of the honey season as a rule they will retain, and

particularly is that true if the flow is short. What I do admit is if they are allowed to swarm they will put more honey into the brood chamber and their chance of wintering is better than where the small hive is used. The eight-frame hive has a tendency to destroy in that way, in the hands of the slip-shod bee-keeper, more bees than ever a large frame hive did.

As to the matter of spring, there is just as much occasion for contracting an eight-frame hive as a twelve, and if Mr. Chapman uses a part of the super expanding his brood chamber, I have a perfectly legitimate right, and I do where occasion requires, to put in a division board and contract the brood chamber, and so I am a good deal unlike the Irishman who said if he had a stick too large he didn't know what to do with it, but if it was too small he could splice it. So if I find a twelve-frame is too large, I take out some of the empty combs and put in a division board, and that is all there is to it.

Mr. Chapman, in replying to Mr. Holterman, said: The question is here, how large a colony of bees should we expect at the beginning of the honey flow; that is, what number should a colony of bees be in a large colony? Take a common Langstroth frame and we count three thousand cells on one side, on the other side there are three thousand more, making six thousand. Supposing we use seven of those combs, that lacks one of occupying an eight-frame brood nest, and for the first generation we get just 42,000 bees from just what cells would be contained in seven of those combs at the end of 21 days; at the end of 42 days it is 84,000. I want to ask you what kind of swarm of bees we got? How large a hive do we need to produce that many bees? I want to tell you to-day that if every colony of bees in Northern Michigan could be counted the numbers would run less than 20,000 to the colony, and there are thousands upon thousands of colonies in that country. Many times have I wished that I could have just what bees could be raised in two combs in three generations to put away in the fall. I couldn't do it. What is the necessity of building a barn for such colonies? We have to take the cost into consideration. Right here is a point in putting those

frames of brood up. During the present season I had a colony on the scale, and the first day it gained fourteen pounds, the second day twenty-one pounds, the third day nineteen and three-quarter pounds and the fourth day sixteen and a half pounds, and at the end of just one week to the minute it was 100 pounds 8 ounces heavier. Now, I want to show what that management with an eight-frame hive will do. I set apart several more colonies just as good. When they needed room I put on an upper story, and when they needed another upper story that was put on. I raised up no brood. I did with this colony that gave me the 100 pounds 8 ounces. When I came to test this carefully I found that in the hive where I had raised up the brood and started the bees, in a moment's notice, in from two or three days, and sometimes five days, they will start in that upper story. On the other hand, I found that colonies exactly as near alike as we could pick them out where I put up brood gathered from 22 to 28 per cent more honey in those very colonies than you could get in the way Mr. Holterman runs his bees. The man that is using the large hive and sets them out and lets them build up just as they have a mind to is losing 25 per cent of the honey he might get through good management.

Now, I want to say you may take our large bee-keepers that do not pay attention enough to the business they have and different kinds of management; they do not use the care and attention they should. Every man, in testing his management, should use the scale. When we get results from the scale we get something that is accurate; we get something that we can swear to; and if our large bee-keepers would test all their management so that they could know just when they can better the results of such management, then there is something we can rely upon. Our large bee-keepers, if they would test this thing carefully, at the end of five years would be hundreds of dollars better off.

There are so many things in this large hive that we have no time to touch upon one-quarter of them; but there is one point in regard to ripening honey and getting our extracted honey in good marketable shape. In my country it is cold; I don't know as

it would work, say, in the south or possibly not in the southern part of this state, but we have a lot of bee-keepers in Northern Michigan that use large hives. You will see in the columns of our Bee Journals that the part of their honey is left on the hives for weeks and weeks and weeks till it is thoroughly ripened. Now, a man in Colorado wrote me and wanted to know if it was possible, with the most favorable conditions present, to get an ounce of our raspberry honey ripe. The trouble is here, when we study carefully the laws governing heat and cold they will explain every bit of it. I have had lots of experience this fall with forest fires and I have studied them carefully, and there is no subject I think in connection with our industry that I have studied so carefully as the laws governing heat and cold and so far as it affects the inside of a hive. Take one of those large forest fires, we have a strong wind from the south, and we can go right up to the very edge of the fire. Why? Because the wind blows the heat and smoke and it all goes to the north. But, let us go around on the other side and within one-half mile of such a forest fire is as near as you can get, but at night the wind would go down till it was perfectly still. That would represent the inside of a brood nest very well. When it is perfectly still we can walk up to the very edge of that fire on any side. On the side next the fire is the heat, and on the other there is a cool breeze coming. Let us step over four feet on to this burned district, there is no fire there particularly, but at the same time it is just burned over and that ground is so hot it will burn your shoes. How do you find it? Nothing but heat on all sides of you. Now, the place where heat and cold mingle is just the one point where they come together. Now, the rays of the heat, as they leave the frame, or brood nest, converge towards the center and go right over the brood nest or over the frame; the current is greater and the next warmer air will come to this, and it varies in width. I have more than 400 eight-frame hives and over 100 ten-frame hives, and you take a large extracting super with outside combs and you will find in the ten-frame hive there is fully three times the amount of unsealed honey that there is in the eight.

Why? Because the outside combs are too far from the center of activity. All it wants is just a man to compare these methods for a little while and you will not find but a very few who will use a large hive in a cold climate. No, sir, you will not. That is the point exactly.

Mr. Holterman, in closing the debate, said: Mr. President, I have used an eight-frame and used a twelve-frame hive, and I know a good many others who have, and it is very rarely indeed you can get a man that has used a small hive and has gone to the large that will return to the small.

As to this matter of ripening honey, when bees are storing honey in combs, it is necessary for the bees in that hive to be in proportion to the amount of honey which it stores, and whether the hive is small or large that proportion holds good. In fact, the larger the number of bees in the hive the less the contraction will be. That must be sound reasoning. Then we hear about the stagnation at night with the fires, and that is compared to the bees. We know when bees are gathering honey there is no stagnation at night in the hive. The center of activity, as far as that goes, is the whole hive. Each bee is doing its work, each in its place, and as far as that goes the whole hive is active and will be active as long as the honey flow remains. In the small hive the bees are, in the way in which they are run now, far more apt to swarm because in each super that is added to the other there is twelve instead of eight combs there, and where the difficulty comes is that when the bees swarm, whether it be eight or ten frame hives, you will find a great deal of uncapped honey and a great deal that is not covered by the bees. In the next place, by putting brood in the super—I have spoken before of the economy of production—you have to watch those brood combs that you put in those supers for queen cells, and there is another cause and another anxiety for the bee-keeper to watch each one of these combs that he puts in the super and see whether the bees are going to put queen cells in it or not.

I don't know that I have anything more that I wish to say. There is a good deal more that perhaps might have been said. I have brought out

the best I know of just now, and I think I will not take up any more time.

Mr. Ahlers—I would like Mr. Holterman to tell us how much crop he had or how much per colony, and from what source?

Mr. Holterman—We have been told about what is the difference between one hive and another on the scales. Always let us remember that in dealing with bees we are dealing with living things, and when we treat colonies exactly alike as far as we know, and when we have judged all the conditions we know of, even then we find a great difference in what they will do and therefore it is a very difficult thing for us to say that because of one certain thing we know therefore the difference was caused by that, and for me or Mr. Chapman to state what has been asked, with all due respect to the one who asked the question, I don't see how it would help or be of any value, and it would be foreign to the debate, I think.

Dr. Bohrer—In 1864 I made a sixteen or eighteen frame Langstroth hive, I don't remember which; I found when I had a prolific queen in that hive she would fill it with brood within two frames of the outside every time; and in a larger hive than an eight frame a great deal will depend, judging by that, upon the prolific qualities of your queen. If you have a poor queen you are not going to have many bees. If you haven't got many bees you are not going to get much honey. In my own apiary in Kansas, for curiosity as much as anything else, I got a few eight-frame hives to start with, the balance are all ten. I have emptied an eight-frame body on top, and I have done the same with a ten-frame body, and they would both be re-filled about the same time, so that in that case I was getting the most honey from the ten-frame hive, and that agrees with my experience all the way through from start to finish. Good queens lead in all cases so far as quality is concerned. As to the wintering qualities of different hives, I don't find very much difference. With a good queen heading a colony in a ten-frame hive I find they do not consume any more honey in proportion to their numbers than in a small hive. Something may depend in either case upon where you winter them. Our cellars are dry and dusty

all winter so that we do not have a great deal of honey consumed in either. So far as the clustering of the colony is concerned, one of the gentlemen said that a colony in a ten-frame hive would cluster in a smaller space than in an eight-frame. That depends, my friend, entirely upon the number of bees in the hive. With a prolific queen in a ten-frame hive, that is, one prolific in proportion to the space she has to occupy and populate, you will get the most bees in a ten-frame hive, and they will consume comparatively little more than in an eight-frame hive wintered on the same amount.

Mr. Aspinwall—It occurs to me there is one matter we have left out of this discussion, and that is the length of the honey flow. With a long protracted flow we need a larger brood nest to make up for the wear and tear and loss of the bees by age also. With an eight-frame hive we are getting plenty of brood that will last through a short flow, and Mr. Chapman is right for his district. The flow does not last more than the lifetime of a bee. What is the use during that time of feeding a lot of brood? With Mr. Holterman's district where buckwheat follows clover the twelve-frame is necessary to provide the increased supply of bees for that long period, and that is just why there is a difference of opinion in reference to these hives. One locality needs the hive of bees to be replenished for a successive yield in honey. But where we are, with white clover being the only yield, I want to limit mine to seven combs while the honey flow is on. I want ten and twelve filled with brood up to the time I put my supers on. I want to reduce them and make that force work for me the rest of the time.

Mr. Moore—Mr. Chairman, there is one point that I believe has not been brought out in this discussion; it is this, that the large hive has the advantage in manipulation. Now, at this season of the year when we are fixing the bees for winter to see they are in condition we find hives that are built where the combs are solid from one side to the other. I have a lot of side opening hives, and you know how quickly you can get the first frame out of that side opening. Now, if the hive was a little larger so that you could have a division board in, how

quickly you could move that back and get the first frame out; and, of course, if the colony needs the space you do not need to have any division board in there. I think this is quite an important point because life is short and anything that helps in manipulation is an advantage.

Mr. Holterman—I would like to ask Mr. Aspinwall a question, whether he would think that a colony which had been brought forward to the honey flow with twelve combs of brood would give him the same yield as one that had been brought forward with eight; and I would also ask him whether he is indifferent as to the number of bees which go into winter quarters and which then are there to begin again the next season to breed for the honey flow?

Mr. Aspinwall—Mr. President, Ladies and Gentlemen, I certainly agree with both speakers, as I have said before, and I would prefer the number of bees providing the queen would keep up with the demands in laying for a twelve-frame hive. There are lots of colonies where we find the queen equal to about eight frames. I use an expansive hive. I have had ten and twelve and fourteen frames in some of my hives, and if I have a queen prolific enough to produce the bees, I would not reject them for a minute, and they will store me the greatest possible amount of honey. With reference to winter quarters, I think I touched it incidentally when I said the early yields require every bee to produce a maximum amount of honey, therefore I would limit the brood during the storage for that short period, say from three to four or five weeks at the most. After that I should give them every opportunity to increase and breed for winter quarters. Furthermore, about the control of swarming I am biased perhaps a little in my remarks. I have plenty of bees in either case as no swarms issue with me.

Mr. Pressler—I would like to ask if there is a blackboard in the house that is available? I would like Mr. Chapman to show on the board how he figures 48,000 or 56,000 bees ready for the flow in 21 or 24 days in an eight-frame hive. I am here to learn and here to gain some information. If the eight-frame hive is the best hive I want to adopt it. If the twelve is the best I want to adopt it, and I have

never been able to figure out how many bees I can produce preparatory to the honey flow.

Mr. Chapman—If there are three thousand cells on one side and three thousand on the other, that would give us six thousand in one comb, and six times seven is forty-two, and at the end of 21 days we would have just exactly 42,000, the number of cells contained in seven combs. I would not say we would get in seven combs that amount. I use anywhere up to 24,000 if the queen wants them. I put up brood and let the queen go up, or else I keep putting up more brood and let them build just as fast as they want to.

Mr. Pressler—I mean by confining the bees to eight frames I want to know how many bees you can get ready for the honey flow in 21 days, or as many as you like?

Mr. Chapman—I don't know just how many I would raise in an eight-frame, but I would judge it would be about fifteen or eighteen thousand, somewhere along there. It would depend largely upon the condition of the combs, the amount of honey and the amount of brood they would contain, and so on. We hardly ever get a solid frame of brood.

Mr. Pressler—I would like to say what I find with reference to my queens. By way of illustration we will say that the queen will fill one comb with eggs in one day, in an eight-frame hive she fills it in eight days. My queen is idle then for thirteen days. I have thirteen days of cessation of the emergency of young bees. I don't get any bees for thirteen days. My queen cannot lay again for twenty-one days. In other words, my queen is loafing for thirteen days.

Mr. Hershisser—Have you got any queens that lay 6,000 eggs a day?

Mr. Pressler—I say that by way of illustration.

Dr. Bohrer—I have timed them at six to the minute; that comes about it.

Mr. Pressler—I want to make the point that a prolific queen will fill an eight-frame hive inside of 21 days, and if she don't, I say, gentlemen, pinch her head off.

Dr. Bohrer—She will do it inside of six days.

Mr. Pressler—If that is the case the

eight-frame argument falls to the ground, because you can't get enough frame filled with brood in 21 days.

Mr. A. I. Root—We have a lot of ladies present here and so far they have not even peeped, and have not been invited to peep, and if these women handle bee hives I suggest they will find an eight-frame hive a good deal easier to handle than a twelve or a ten-frame hive.

The President—We would be very glad indeed to hear from the ladies.

Mrs. Stewart—I have both eight and ten-frame, and I would just as leave handle the ten as the eight, and I think I get the most comb honey from my ten.

Mr. Robb—I would like to ask Mr. Holterman a question. I understand he is termed a crank on queens. If he paid no attention to the queens and let them manipulate in their own way, which hive would he prefer?

Mr. Holterman—Mr. Armstrong sits in this meeting, and, talking of what queens can do, he will verify the statement that I showed him a twelve-frame hive in which the queen had eggs from corner to corner, and at the very outside there was not more than two pounds of honey in that brood chamber; the rest was all either eggs or brood in different stages. We don't give queens credit for what they can do; we don't give them the chance to do it.

Mr. Holekamp—I have in late years used a few of these large jumbo hives and I found last year we had ten frames full of brood and only about that much bottom. (Indicated two or three inches.) That shows an eight-frame hive is rather small, if the queen can fill ten of these large frames two-thirds full of brood.

Mr. McEvoy—I think there is a mistake in this. I think they are both really using a bigger frame hive than eight. An eight-frame hive left alone is too small, but it is made larger by the tiering up of brood, and you can arrive with more bees with an eight-frame hive if you work it out; it all depends upon the management. I inspected bees north of Toronto some years ago where a man wanted all big hives. I told him the bee-keepers were going into big hives and some day they would rue it. We went across to another man, and he had a

lot of eight-frame Langstroths, and he had immense large hives, and the big hive was full of honey, pollen and little or nothing in the supers, while the eight-frame hive was all ready for extraction.

Take a big hive right in the midst of the honey flow, there is one time when that queen is looking for a place to lay, because it is full of brood, honey and pollen; if you lift out a couple of frames of brood and give more room you can run it on that principle. It all depends on the management. I like the smaller hive. I will never use the twelve-frame hive because I couldn't afford to keep them. I can get riper honey because there is a greater body of heat in the smaller space.

Mr. Hershiser—I wanted to ask Dr. Bohrer if I understood him to say that his queens laid six eggs a minute?

Dr. Bohrer—I have timed them and have seen them lay six eggs in a minute.

Mr. Hershiser—Do you claim they work at that rate for 24 hours a day?

Dr. Bohrer—I didn't sit up all night to watch. I suppose they would have to shut down to take time to get dinner.

Mr. Holterman—Wouldn't the same argument hold good with the sickle and the cradle and the reaping machine?

Dr. Bohrer—Certainly it would.

Mr. Byer—That gentleman Mr. McEvoy referred to has since enlarged his hives and he has lost much money, he was telling me, by using the eight-frame Langstroth hive. I have eight-frame Langstroth hives and I have twelve-frame quite a bit deeper than the Langstroth, and those twelve-frame hives are always ready to super before the eight-frame hives.

Mrs. Lewis—Ladies always like to have kitchen work pretty handy and close by and they want plenty of room, and so with the bees. When we raise up bees and do not give plenty of room in the brood chamber, when we come to extract we find young bees in our extracting stores and we find pollen there. If we want to make box honey, and we find pollen in the hives, it is a sign that we need more room in the hives. If we give plenty of room in the kitchen the rest of the work will come out all right.

Mr. Hill—Mr. Holterman, do you raise the combs practically, or depend on the largeness of your hive for your brood chamber? The point I am getting at is this, I have a hive of my own that I built on the theory that a colony wanted the size. It is flat shaped and it is square. Now, it is not quite large enough. I raise the combs, but there is this thing I do not like about it, as that lady pretty nearly struck it just now, that when I come to extract I raise them, and those combs are filled with dandelion, soft maple and everything of that kind in the spring, a quality of honey I don't want in my clover honey. Consequently when I come to extract I mark these hives and as soon as the clover begins I extract these. What I want to know is if Mr. Holterman's large hive will prevent the necessity of raising those combs, and if it does that is a point in favor of his hive. I would also like Mr. Chapman to please explain to us what he does with his clover honey when he has to raise brood?

Mr. Chapman—I have already explained that question. I do not want a pound of old honey left in the hive at the beginning of the honey flow. I am speaking of this old honey in the combs. It becomes a nuisance; we don't want to carry it over from year to year. I do not raise up combs with honey in.

Mr. Hill—How do you get it out?

Mr. Chapman—There isn't much in it.

Mr. Holterman—Eight-frame hives.

Mr. Morrison—I recollect about fifteen or sixteen years ago this discussion would never have happened. Everybody had eight-frame hives. The ten-frame hive was an exception. Now, I think the tide has turned altogether. I think the ten-frame hive has the floor, and it wouldn't surprise me if the twelve-frame would go beyond it. I went experimenting myself. I went on the idea that I got from reading Mr. Dadant's book. I fixed up twelve frames the best way I could, and that was the first time I tried twelve frames. I made a hive of my own and in three weeks' time I took from that hive 120 fancy sections. I don't know how many sections I had, but I know I had that many, and I can corroborate what Mr. Holterman says, that every one of my

twelve frames were solid, full of brood. For comb honey the argument has always been that you must use a small hive. Anyone here can try that and give it a fair trial if they like. I went to work and fixed a tub and put the bees in, and I put the first swarm in it, and in the fall I chased these bees out. They didn't have more than a handful of brood when I brought them out of the tub, and I took 220 pounds of extracted honey from that tub, and that convinced me that a large brood chamber was the thing.

The idea has prevailed that a queen will lay about 3,000 eggs a day, but I believe with Mr. Dadant that we can double that in many cases, that is, a queen will lay 6,000 eggs a day.

Mr. Chapman—I have been reading in the "American Bee Journal" where one man over in Canada using just a common eight-frame hive has taken 418 pounds of extracted honey from that hive. If there is a man in this house who can show anything like that with a large hive, let him stand up.

Mr. Byer—Pardon me, that was practically a twelve-frame hive; that man added a super to it.

Mr. Holterman—Answering Mr. Hill's question I would say that there is a great objection to raising brood up into the super; there is more or less of the old honey and many a ton of honey has been ruined by a few pounds of dark spring honey that has been put into the super. You may say you can extract it, but it is a somewhat difficult thing to do. I avoid putting brood in the super, and the way I do, if I have weaker colonies, after the twelve-frame is occupied as a brood chamber and they begin to build cups, which, after drone production, is the next stage towards swarming, I take the combs of the hatching brood out of those twelve frames and put them into the ones nearly full and so build up the next strongest colony, and I avoid in every way putting combs into the super. Mr. Chapman has practically admitted that that cannot be done, not to have old honey in the hive because you have got to prepare for these different seasons.

Mr. Hershiser—I object a little to such heavy obligations being imposed upon queens. I don't believe any queen will lay 6,000 eggs a day and keep it up for any length of time. If they

did it would make a colony at the end of 42 days of 252,000 bees, and, allowing something for destruction—and we would allow a good loss—still there would be 200,000.

Mr. Morrison—The number of eggs has been carefully counted and the queen watched the whole time she was laying, and there is not any guess-work about it. The period in which a queen can and will lay is a very short period indeed in this northern climate; perhaps it is not two weeks during the whole year. It depends entirely on the bees, not on her, as to how many eggs she will lay.

Mr. Hershiser—The question is how long it takes a queen to fill up a hive. I think the impression we ought to get is how many eggs would be the average for say 42 days under favorable conditions, and I think figuring on that basis we could not figure over perhaps about 1,500 eggs a day.

Mr. Tilt—With regard to getting pollen in the upper story when you raise brood, I don't think that is necessary, nor I don't think it is necessary to get spring honey, because any colony of bees that has a good queen will have combs of honey or brood solid practically without pollen or without honey which you put up above the zinc. If you zinc your eight-frame hives so that the queen can't get up, as quick as the bees crawl out they are full of honey, and you continue to put up brood every little while, of course, your queen will have plenty of room below and never have any honey or pollen in the top.

Mr. Coveyou—I would like to mention the most active time and the advantage of a large hive. If you have a large quantity of bees in the spring the queen will lay more eggs. The only thing that helps the colony out to make it larger is the hatching of a large quantity of young bees after the first 21 days. When they first start to lay in the spring the bees take care of the largest number they can take care of, and there is not one colony in a hundred that can take care of the eggs that the queen will lay for the first 21 days or even 10 days in the spring. After the first return if they have got four frames or five frames of brood, after those are hatched, that queen can lay probably 3,000 eggs a day or more and take care of them. She may do that for two or three days, but after that she falls back.

The President—Does your argument apply to the ten or twelve frame hive? There is a great deal being said that does not apply to the question.

Mr. Hershiser—I want to say a word or two in favor of the large hive. I have a good many small hives and a good many large hives, but I believe that to-day there would be far more bees in the country if we had larger hives, because the larger hives hold more honey, and bee-keepers who are unaccustomed to taking good care of their bees by reason of having too much to do, and by reason of carelessness, have a good many bees starve to death in the eight-frame hive that would not if they were in a larger hive that held more stores.

Mr. Hunt—You never say anything about pollen. I find they have generally got two combs of pollen in a ten-frame hive. If I put some brood on top in the extracting super I find they carry some pollen in there and I don't want it there. Moreover, when I come in the fall I find I have got the whole brood up in the second story and none in the lower story.

Mr. Davis—I think myself that the question of large hive or small hive is something similar to what they used to say years ago about growing crops. We have one of Mr. Holterman's disciples up near our place who advocates the big hive. It would be a fair way to settle this question to say that the further south you go the bigger hive you want, but up north, even the eight-frame hive is plenty. I had some ten-frame hives and I have cut them down to eight, but Mr. Holterman is a little further south, let him have it. I think the further south you go the bigger hive you can have, even if it as big as a barn.

The President—If there are no objections the discussion on this question will come to an end and the judges may have the question for decision.

The next thing upon the program is an illustrated lecture by Prof. R. E. Snodgrass of Washington, D. C., on the anatomy of the bee.

Prof. Snodgrass gave a very interesting address on the anatomy of the bee, which he illustrated by drawings.

At the conclusion of his address, on motion of Mr. Holekamp, seconded by Dr. Bohrer, the Convention adjourned to meet at 7 o'clock p. m.

SECOND DAY.**Evening Session.**

Wednesday, October 14th.

At 7:30 p. m. the President called the Convention to order and said: I understand the committee on the debate is ready to report.

Mr. Taylor—The report of the Committee is that according to the weight of the evidence in the majority of cases the large hive had the preference, but under certain circumstances, different methods and different men the small hive was the best. (Applause.)

Mr. Moe—Does that mean large hives for large men or how? (Laughter.)

The President—Tall hives for tall men.

I have been requested to ask the Committee on Resolutions and the Committee on Exhibits to report before the noon adjournment tomorrow, if they can, as it is evident many will be going away after the morning session.

We are now up to the dry toasts. We have had the banquet, and you can consider now that you are at the banquet table and you can listen to the toasts. I am not used to attending banquets and toasts of this kind, although I have attended a great many banquets and have responded to some toasts, but they usually had some camel's milk or something else there.

I am not going to use the usual toast master's talk in introducing the gentlemen who will respond to the toasts of the evening. The first upon the programme is "Securing Legislation for Bee-keepers," and the gentleman who will respond to this toast is one who has had a great deal of experience, and when I mention his name you will all know as well as I. His name is N. E. France. He will respond to this toast. (Applause.)

Mr. France—Mr. Chairman, I suppose that means something pertaining to laws. We recognize law as an authority. Sometimes the mother's law comes pretty severe on the little boy, I remember that part of it, but as to bee-keepers, from what I have gleaned from the Convention, the one feature here would be legislation for the benefit of bee-keepers. If I remember right we have Canada taking

the lead, followed immediately by the States. We have now twelve States that have laws upon the subject of the diseases of bees, and from the mixture and jangle we have had upon that subject today, if I should say a word in behalf of legislation in connection with the diseases of bees, providing it would be in order, I take it that that would be received.

In my own experience in my State the disease of foul brood had gotten a good headway. The President of our State Association appealed to the members of the association to help him get some kind of law that would check at least the spread of the disease. A committee was appointed by the chairman of that Convention, the president to be a committee of one, to go before the legislature and get the desired law. No form of law had been given him, or suggestion, or how he was to obtain it, but he was told, "You get it." Now, you know if you take a queen bee and put her in a hive, either eight or ten frames, she wouldn't give you very many pounds of honey; she has got to have workers with her, and they have got to co-operate and help to get first a good colony of bees; and that was the result of this attempt in my State to get legislation. The president of our association went before the legislative body and asked for a law to protect us against diseases of bees. He was asked, Who wants it? The answer was, The Bee-keepers. How many Bee-keepers in your State? I don't know; we will estimate or guess at it. How many places in the State have you got that disease? I don't know. How many Bee-keepers in your State have asked for this thing? The State Association. How many members of it? It happened it was at the close of one of those years when we had a small crop and where this statement first originated: "No honey no money, no money no go," and consequently we had a small attendance of the membership; a membership of some thirty odd made a pretty small impression upon the legislative body. The president was ridiculed, and he was asked to go home to see if there wasn't somebody wanted the legislature to look after the bed bugs of the State. He was turned down, but don't for one moment think that foul brood was turned down in our State. It kept on going from one yard to

another until counties were affected. Then our State Association asked for it again, and they were going to appoint a committee of one again. We saw the folly of that. If a swarm of bees gather honey it means united effort. A few members could not do it, but the many together could accomplish it. A Committee of the Officers of the Association were delegated to go before the Legislature with the form of bill that we wanted for that law. It met opposition on all sides and several times looked as if failure would be the result. For instance, being a part of that Committee myself I well remember when going before one of those Legislative Bodies asking for its passage, the Chairman of the Committee was sick and unable to attend, and the next Member on the Committee acting as chairman pro tem had turned down quite a number of bills, until it was a boast of the committee that they were killing everything that day that came before them and had reserved us to the last for ridicule and laughing stock. Well, he says, we have come to the Bee Bill I believe, or skeeters or bed bugs or something, anyway we can fix that in a few minutes. There was an expression upon that house that gave me no hopes. The committee had finally left it to one to look after. The Bee-Keepers of the Association were not with me, and the committee consisted of me alone, and the fate of it looked sure. I felt it was a just cause and I could not see that bill lost, and I felt that if I made any plea for the bill whatever it would be almost unanimously against me, and as I represented the State Organization and that represented all the bee-keepers of the State, I asked them in justice would they defer the hearing of that bill until one week from that hour, in order that the chairman of that committee representing the entire body of legislation could be present. The chairman pro tem said, don't you think that all but one of the committee is enough to fix you? Go on with what you have got to say; we will grind your organ for you in short order." I said, "No, sir, I beg your pardon, I want one week from this hour so that that committee may all be here." It was finally granted and I felt joyful. I went to the hotel and I wrote until but one light was left, to every bee-keeper I could think of in

the district where the members of that committee resided, and I said, The bill will have a hearing one week from today, and not a bee-keeper of your district has seen your member for the Legislature or said a word to support that bill, and they are opposed to it. Aren't you going to give any help? The week rolled by. The time came and I went back, and the man who had been chairman pro tem of the committee came and said, France, aren't you a Methodist? Yes, I said. That has got nothing to do with the matter. Why? He said, aren't you a Methodist? Haven't you been to revivals? How in the name of heaven did you stir up all the bee-keepers in my county? When I got home on Friday night from that week's meeting at the legislature the depot was thronged with bee-keepers all fighting mad at me because I wanted to fight that bill; I am a converted sinner now, I will support your bill. The bill went unanimously, and we had a law. United effort gained it, and those of us in the States that have no laws should not expect that one, two, three or many bee-keepers in a State will get a law; it is the united effort; and then let the States unite and have if possible laws that will co-operate one State with another. I hope we will be united on this subject and each do his individual part as a part of a strong colony of bees, be it eight or ten frames, and get the desired crop, legislation. (Applause.)

The President—The next is "Rough Spots in the Pathway of an Inspector of Apiaries," and the gentleman who is to respond to this toast is a diamond in the rough, and we may expect something very good from him, and you will agree with me in that when I announce his name, Mr. William McEvoy.

Mr. McEvoy—I will have to decline that. I had but very few rough spots in my eighteen years. I have nothing to say along that line. I got along first rate with all the people excepting a few; and I have nothing to say.

(Mr. McEvoy was greeted with rounds of applause.)

The President—That is the greatest ovation we have had since we have been here.

Mr. McEvoy—Mr. President and gentlemen, I don't wish to speak along that line because if I did I might stir

up a little breeze. I have had some rackets, and I would rather not go into a thing of that kind.

The President—The speaker who was to reply to the next toast has asked me to allow that to stand over until the morning session. Then we come to the possibilities of future bee-keeping, and the gentleman who will respond to that perhaps has had more experience along the line of possibilities than any one present, and has given to us perhaps an invention that will be in the future worth as much to us as many, if not any, of the inventions that have yet been brought out. Mr. J. A. Aspinwall of Jackson, Michigan.

Mr. Aspinwall—Mr. President, ladies and gentlemen, it does not take very much of an optimistic view to see into the future of bee-keeping. An inventor perhaps has a little more optimistic chance than almost any one else. I want to say that the experiments of the past to most bee-keepers ought to reveal the possibilities of the future. They certainly do to me. The one I want to speak of first is the control of swarming. I have been through so much of that for twenty years, and with the results attained in the last two years I am thoroughly convinced of the perfect success in that line. I am not going to talk much on that invention as that has been hashed and re-hashed in the Bee-keepers' Review and somewhat in Gleanings in Bee Culture. There are facts that we must take into consideration, and we take the first one from the 1st Chapter of the Book of Genesis: "God created man in his own image and told them to be fruitful and multiply and replenish the earth," and then furthermore "to subdue it and to have dominion over the fishes of the sea, the fowls of the air and every creeping thing that moveth upon the earth." Now, what does that mean? We have controlled all the domestic animals as regards increase, all the fowls that are in our possession, such as we desire to control, with perfect success. How about the bee? And may we not, judging from analogy, and, reasoning by that wonderful power, be able to say that the bee can be controlled in its increase just as much so as any animal? We certainly can control the increase within the colony by limiting the num-

ber of frames, that is easily done, but they multiply by division, and that is a thing that I have been working on to control for upwards of twenty years. The possibilities for the future lie largely in that.

The next most important thing is to control the mating of queens. I have experimented somewhat on that line, so much so that I feel encouraged and have absolute confidence in the ultimate success that we can very easily control the mating of our selected queens by selected drones. Just think of the results there! What does that mean? It means improvement in the size of the bee, until we reach something that can obtain honey from the red clover. There are very few bee-keepers here who have not tasted the honey of the red clover. I have taken from one head of red clover more honey than a bee could carry. When we have accomplished that we can plant red clover, which has a two fold purpose, one for hay and the other for honey, and we have increased our honey resources how much? We can't tell.

In reference to the mating of queens in confinement I refer to especially. I have tried it by clipping the queen's wings slightly, with results that were favorable to controlling the flight of the queen or keeping her within the area of one's own bees. I have increased the mating with pure drones perhaps 25 per cent in a hundred, where most of my queens some seasons were meeting black drones; but when you come to put the queen in a place where she cannot meet any other than the drones selected, there will be magnificent results. Now, I know the majority of our leading bee-keepers, more especially the older heads like Mr. L. C. Root, who is under Mr. Quinby's instructions, felt as though it was an impossibility, but there are certain factors that have come in in the course of my experiments that have led me to believe that many things that were thought impossible, as it is in the mechanical world, are today possible. Who would have thought of wireless telegraphy; who would have thought of the telephone twenty-five years ago, and who would think of a flying machine being a success? Here is our friend, A. I. Root, who is rather enthusiastic on that line, and as the world is

becoming more and more advanced in mechanical flight, we are approaching it.

Mr. A. I. Root—We have got there.

Mr. Aspinwall—And there is some danger attached to it at present, but those things will all be eliminated.

As to the next possibility of the future of bee-keeping, it is hard to say what it will be. When we have increased the size of the bee by selection for a series of years, so that we are able to reach the honey in clover that we cannot today, what does it mean? I can't tell. Possibly honey will be at a price so that the majority of people can take it as an everyday luxury. It is now to the majority a luxury perhaps once a month. I know people who come to me and buy a section or a few sections, and not more than a case, and that lasts them over a year. We use in our family a section every day or so throughout the year. When honey can be sold retail for ten cents a card, as we call it in Jackson, and the production so great that millions and millions of pounds are produced where hundreds of thousands are today, we will certainly be in the land of milk and honey. We have plenty of milk, and this will make it the land of honey also.

There are other possibilities in bee-keeping, and another one is on the line of successful wintering. There was a gentleman present who told me he lost nearly all his bees in open air wintering. He complains of the locality and of the poor quality of the flow that the bees have to subsist upon in the winter, and therefore the result. We know we can feed anything in the spring, and the bees will live upon it. So long as they can maintain their flights to discharge the poison, they are all right, but this accumulation in the intestines during the winter is something that is fatal to bees where long confinement under the present methods of wintering make it impossible to carry the colonies through. Give them good clover honey, or, instead of taking it all from them, give them the refuse, and bees will winter all right. Of course, this method of wintering I refer to will enable a colony to subsist through a long period of confinement in the open air. I have wintered bees where I got lots of honey-dew from maples, where the

winter did not admit of a flight for 117 days, and that is pretty long for Jackson county, and lots of times for 90 days; and three years ago, when the mercury went below zero for 11 days in succession in the month of February. The last part of the winter is the worst, when the colony is charged with an excess of poison. In my experiments I have found that bees can subsist upon what they hold in their sacks about seven days. That is why a swarm goes from the parent colony with sacks full of honey to provision themselves against a rainy spell, which some times comes right in the honey yield for three days. In the olden times in this State and in New York State I have seen it rain three days in succession in June and July. In eight days they will begin to die off. Hive protection should be such that it will enable the colony to uncap the honey. The temperature has got to be such, no matter whether zero or not, that they can uncap their honey. The bees at the outer side of the cluster adjoining the honey become chilled where the zero weather goes beyond seven days, so that it is fatal to the colonies in almost all hives. The future of bee-keeping will enable the colony to live through six, eleven or twenty days of zero weather, if it is necessary.

I might enumerate some other things in bee culture but I think I have occupied my time.

Mr. McEvoy—You are doing all right.

Mr. McEvoy reminds me of another point that is worthy to be sought after, and our esteemed Manager, Mr. France, spoke in reference to the legislation on that very point. Mr. McEvoy is our Foul Brood Inspector for Canada. Mr. France looks after the interest of the bee-keepers of the entire States and Canada, and he spoke of the difficulty in moving a legislative body to the co-operation that is necessary among bee-keepers. Now, let us see if we cannot, by the proper study of our American Bee Journal, Gleaning in Bee culture, and Bee-keepers' Review, and with the co-operation of the men that are versed in the science of foul brood, so to speak, if I may use the word, obtain knowledge so that every bee-keeper will be intelligent enough to eradicate that disease himself, and there will be no need

for the foul brood inspector or any legislative acts in reference thereto.

Now, you know that Paul in the Epistle to the Romans says that the law was made that sin might abound, and the law is made you see not for the man who is doing right, but for the man who is doing wrong. There is no use of a law that condemns the murderer or the man that is doing any violence towards his neighbor, for this body; they are not found here; they are found in lots of places in our large cities and some in the country; but every man that is right is a law to himself; and in reference to this disease of foul brood, if every bee-keeper in the land went into it thoroughly and took the precaution to look after his own apiary, there would be no need of any legislation. While we are the most progressive people in the world in reference to inventions generally and to the advancement of our pursuits, as far as the financial end is concerned, Europe is ahead of us in reference to the technical and scientific side, and we make a great mistake in not looking after the technical and scientific side of bee culture. I think every book on bee culture which contains the physiology and anatomy of the bee should be read with the same interest by bee-keepers that the practical side is.

I noticed to-day when the lecture in reference to the anatomy of the bee was taking place that those present kept dropping out of the audience until there were very few left before the discussion ended, among the rest was myself.

There are other possibilities in bee culture, and these are in reference to minor details in the handling of bees. Mr. Ernest Root gave me some pointers to-day, and one of them was that the handling and the stirring up of the bees produced more activity. We always say we want to let colonies alone during the working season. I don't know whether it was Mr. Hutchinson or some one else told me that moving bees from one spot to another during the season increased their production. I think it was Mr. Dadant said that.

There are some things in the way of judicious management in the stirring up of the bees that produces great activity. The introduction of slatted frames between the regular

ones of the colony will do that. I wasn't aware of it until this very fact was brought to my notice. I know it makes a difference to the colonies putting them in new quarters. I will take a colony that has swarmed where there are no slatted frames in—and I think Mr. Holterman will bear me out in some of the work with my hives along that line—taking the frames after they have swarmed, removing all the queen cells and introducing slatted frames puts the colony in the light of a swarm that is in new quarters, and they go to work with renewed energy, and a non-swarmed colony works much faster than those which have been put in new hives.

I thank you for your courtesy and for the attention that has been given. (Applause.)

The President—The next thing is the cost of honey production, and the gentleman who will respond to this topic or toast is a man so methodical in his every thought and every move that I know he will give us almost the exact results in the production of comb honey and the cost of production. I will call upon the Hon. R. L. Taylor of Lapeer, Mich. (Applause.)

Mr. Taylor—The secretary kindly hinted to me, when I was notified I would be expected to speak upon this topic, that I had written a very notable article, as he termed it, a good many years ago. Well, now, I don't suppose he expects I am going to re-hash that, and if you want the mathematics of it you will find it in the "American Bee Journal" of January 29th, 1892; it was also published three or four years ago in Mr. Hutchinson's paper.

You understand, of course, that the production of honey costs labor and supplies and this thing and that thing, but then this is a toast. Now, responding to toasts has always been a bugbear to me, and I will tell you how it was. Several years ago—it is a good many years ago now—42 years ago to-morrow we were married. Well, a few weeks after that we attended a Burns festival and I was called upon to respond to the toast of "Our Offspring." (Laughter.) Now, ever since when toasts are mentioned or responses to toasts, and I am expected to respond, it is no go. I am like the boy who lived up outside of our town, he was an inveterate stut-

terer, and his father stuttered too, so the boy was not to blame. Mr. Jones was greatly concerned about his boy and he wanted, if possible, to overcome that stammering in his son, so he went to the physician, Dr. McCall, in our town and he told him what he was there for, and he went through the whole story, describing the stuttering of his son, and when he got through the doctor says to him, "So your son stutters all the time." Mr. Jones says, "n-n-no, only when he t-t-talks." (Applause.)

The President—The next is the friendship of our fraternity. This is something that strikes me very favorably indeed. I am very fond of friendship, and I like to be friendly with everybody, and it pleases me very much to feel that almost everybody is friendly with me, and it reminds me of a little incident of a humorous character that took place not very long ago. A gentleman was going from his home to the office and a very pretty girl overtook him, and she said, "Do you know that I think you are a real nice man;" and he said, "Do you really? Well, I have always felt you were a very nice girl." They walked along together and finally she said, "Do you know that you really remind me of a song?" Well, that made the gentleman feel a little more near and a little more nervous possibly than ever, but he didn't like to say anything, but he couldn't stand it. Before they got to the office he said, "Say, what is the song I remind you of?" She said, "When the Frost Is on the Pumpkin Vine." (Laughter.)

The gentleman who is to respond to this toast is perhaps a better looking man than the one I have referred to, and it is possible that something of that kind may have occurred to him in his lifetime, but it might not have reference to the frost upon the pumpkin vine. He is that gentleman who takes such a very pretty photograph when he has his picture taken. You often see it in the Journals. His name is W. Z. Hutchinson. (Applause.)

Mr. Hutchinson—Mr. Chairman, Ladies and Gentlemen: It has been said that we are all willing to lend a helping hand, but decidedly backward about lending money; in short, the world's gauge of friendship is the big, round dollar. But even when measured by this standard, the friendship

of our fraternity is not found wanting. Let me give just one, little personal instance:

As many of you know, "The Review" was started on considerably less than nothing; the first few years was a race between receipts and expenditures, with the latter often in the lead. Well, near the close of the first year, a bee-keeping friend whom I had not met, and may never meet, wrote and asked how the "Review" was "coming on." I replied that, early in the year, I had bought type and other material for use in printing the "Review," and that this was now all paid for except \$20.00. Upon Christmas day came a check for \$20.00, accompanied by such a letter that made it impossible to refuse the gift without giving offense; so, on my subscription list is one name after which is written "life subscriber."

While the worldly measure of friendship may be the dollar, there are other tests far deeper and truer; in fact, I am not sure that tests of friendship are the most interesting phase of the subject. I have often been led to wonder why there is this great depth of friendship among beekeepers; what draws them together as with hoops of steel? Perhaps the explanation is that bee-keeping appeals only to men of a certain make-up hence, they are, by nature, kindred spirits. Let the explanation be what it may, you know that when you were on the way to this Convention, if you went through the train and found a man wearing one of these buttons, your hand went out instantly. If you had never met before, it made no difference. You sat down in the same seat, smuggled down together, and then how the tongues began to fly! You have met this man only five minutes before, but he is a **brother beekeeper**, and you have for him a warmer feeling of friendship than for the butcher who has lived next door to you for five years!

If I had left the bee-keeping ranks a few years ago and engaged in manufacturing, or merchandising, or some similar occupation, I never should have heard of a bee convention without a longing to be there, well knowing that, had I remained a bee-keeper, I would have been present and seen cheeks kindle, and eyes flash, and heard the occasional enthusiastic resounding "twhack" on the shoulders

and felt the strong, warm clasp of many hands. I tell you, friends, these things are far above dollars. They are the dearest things on earth. They have brought before me tonight this sea of faces.

The friendship of our fraternity! May it never grow less. May it cheer and encourage and brighten our lives and draw us together like a band of brothers. (Applause.)

The President—The next is "Bee-Keepers as Temperance Reformers," and this comes from a gentleman who I know has the temperance question at heart, and a man we all love to listen to. His name is George W. York, of Chicago, Ill. (Applause.)

Mr. York—Mr. President, Ladies and Gentlemen: I am not to blame for talking on this subject tonight, neither did I select it, so if I should say something that does not suit somebody, you will have to blame somebody else. Some times it is well to read instead of speaking extemporaneously.

BEE-KEEPERS AS TEMPERANCE REFORMERS.

Mr. Toastmaster, Ladies and Gentlemen: The pathway of the reformer is usually strewn, not with flowers, but with hardships and **some stings**. It is not unlike that of the bee-keeper, at least so far as it relates to stings, only the bee-keepers' stings are of a different character and source.

I think it was the Poet Whittier who advised young men to allay themselves with some unpopular righteous cause and then to push to make it win. The day **was** when the temperance cause could be classed with the unpopular causes. But not so today. It is rapidly getting to be very popular these days to be on the side of temperance and prohibition of the liquor traffic and against the open, legalized American saloon.

But are bee-keepers temperance reformers? My experience with them for nearly a quarter of a century has very clearly shown that practically all bee-keepers are on the side of temperance and prohibition, and the rest are coming fast. Bee-keeping and intemperance don't go well together. It is a combination that would be likely to result in **more stings** and maybe some "snake bites" as well. Surely the bee-

keeper who **indulges** in strong drink is "stung" and bitten in more ways than one.

"I have such an indulgent husband," said a good lady. Whereupon her friend, Mrs. Spiteful, said: "Yes, so John says. Some times **indulges** a little too much, doesn't he?" How thankful is Mrs. Bee-Keeper that her husband is among the right kind of indulgent ones.

It is a fact that practically all of our leading bee-keepers are temperance men, and I dare say put their principles into practice and full effect at the ballot box whenever an opportunity arises so to do.

Now, there is the "Grand Old Man" of beedom—Dr. Miller, of the **West**. He stands four square on temperance and prohibition. And so does that other "Grand Old Man" of the **East**, Mr. Doolittle, who does so much.

And then there is A. I. Root. He's been "Rooting" around for a good many years, and I have always thought from his sermonettes that he would not be caught running a saloon should he ever quit a bee-supply business and raising "garden-sass." I think all will concede that **A. I. R.** isn't filled with "hot air" when it comes to the temperance question, and a few other moral subjects.

I might go on and name a glorious company of bee-keepers from all over this and other lands—even over in **Canada**—who are temperance reformers, and who would do their utmost to help wipe the saloon curse off the earth. But there are so many that it would be impossible for me to name or count them. The proper thing to count those in the United States will be at the polls next November 3d, when, no doubt, they will be just "**Chaffin**" to roll up a big vote for the great reform which all mankind should want to see win.

Now, for a little personal experience with bee-keepers of this drink question. As a good many know, I have not failed to attend a single National Bee-keepers' Convention, and some others not national, during the past fifteen years. And I am most happy to say that only on **one** occasion have I ever been asked to take a drink. That was in Canada, I regret to say. Of course, that particular Canuck wanted to **treat** me right while I was enjoying existence under the flag of

Her Majesty, Queen Victoria, at that time—in 1895. But I never blamed the rest of my good Canadian brethren for the mistaken kindness of that one of their goodly number. For he was much in the condition of a man whose good wife said to him, "Now, Jim, when you're full, instead of asking for more beer, why don't you ask for sarsaparilla?"

"Well, by jove," he said, "when I'm so full as that I can't say sar-sa-paril-la!"

All who have made a practice of attending these gatherings of bee-keepers know how seldom we ever see one of our crowd smoking, and now never drinking. When the Convention was held here about 25 years ago, we had to pay \$40 rent for the hall in the third story of a building. The owner of the building kept a saloon in the basement, and oh, how bitterly he talked when he was paid his rent. He said, "If I had known what kind of a set of fellows you were, you would never have got that hall for that money. Not one of you has been in my saloon!"

At the hotel opposite, where most of the convention members stopped at that convention, the boy at the cigar counter was heard to say, "Queer crowd this. Do you know, I have sold them just three cigars!" (And I should say, that was just three cigars too many.) The fact is, that the name "bee-keeper" is almost synonymous with "temperance." And I rejoice in it. We can all help to hasten the dawning of the blessed day when there shall not be a saloon or drunken man on the face of this beautiful earth of ours.

Temperance and prohibition have made such rapid advances during the past few years, that to-day some forty million people of the United States live under "a stainless flag," so far as the open saloon is concerned. And I truly believe that before another ten years shall have passed, there will not be a legally open saloon beneath fair Columbia's flag of freedom.

But we will have to settle this great liquor question among ourselves. And this reminds me of a story I once heard. It occurred in Alabama. A colored man had a little pig he wanted to sell. A white man came along in the morning in his wagon and bought the pig for \$3. He drove away, but

somehow the little squealer managed to get out, and ran back home to its little pen. About the time it arrived, another white man came along who also wanted to buy a pig. He bought it, and paid the colored man \$3 for it. He had not gone far until he met the man who first bought the pig, and was asked where he got that pig. "Why, I just bought it from the colored man up the road."

"Well, that pig is mine," said the man who bought it in the morning. "I was driving along and somehow it got out and must have returned home. Let's go back and see that 'nigger' and find out why he treats us in that way."

Arrived at the negro's cabin the first man asked, "Didn't you sell me that pig this morning for \$3?"

"Yes, sah, ah did," said the darkey.

"And didn't you sell the same pig for \$3 to this man a little later?"

"Ah did, sah," was the answer.

"Well, what kind of treatment is that?"

Whereupon he gave the following reply in a self-satisfied manner: "Well now, gentleman, can'd you do 'way by youaselves and settle dat little question?"

It is up to us all to settle among ourselves the question of the liquor business. We can't shift the responsibility as the colored man in Alabama tried to do.

Referring again to the tobacco question among bee-keepers, which is really the temperance question in another direction, I am reminded of an incident that occurred in Chicago when Newman & Son were in the bee-supply business and I was in their employ. A bee-keeper called to get some supplies, and, after buying several things, Mr. Newman, Jr., said, "And now wouldn't you like a Smoker?" meaning, of course, a Bingham bee-smoker in those days. Very promptly came the reply from the bee-keeper, "No, thank you; I don't smoke."

I think it was in Philadelphia that a bee-keeper of the temperate kind was employed. As he was about to change to another position he asked for a recommendation from his old employer. He was granted his request, the testimonial reading: "The bearer, Mr. Beeman, is industrious, hard-working, faithful and sober," etc.

After reading it over, Mr. Beeman asked his former employer if he would please make it a little **stronger**. Why, of course, he said he would if only he knew how Mr. Beeman would like to have it. Whereupon the Beeman said, "Put it this way:"

"Mr. Beeman is industrious, hard-working, faithful, and **often sober**." He thought "**often sober**" was better than plain **sober**. Of course, he was an exception and probably came from the Emerald Isle.

But I must not continue longer. I wish only to say that I am proud to be one of such a royal, temperate company as are the bee-keepers of this and other lands. But we must not fold our hands and sit idly by, while our fellow men are pushing the battle against the open saloon. We must do our part to raise the Nation's manhood. We must let our light shine, we must use our influence—yes, and our ballots—whenever an opportunity is presented to strike the Demon Drink a killing blow.

"How long, how long this degradation,
To blight the manhood of the nation?
How long fair woman's name dishonor,
Heaping shame and grief upon her,
Whose gentle voice so long hath plead,
Whose feet so long have sunward
led—

Little voices vainly crying,
Joy of childhood crushed and dying?"

"Defend the home! Protect the
school!

Blow, blow a ringing bugle note!
For Manhood strike! For Manhood
vote!

Till Manhood rule from sea to sea,
Magnificent in victory;
Till mountain-peak and prairie sing;
Till our broad land, redeemed, shall
ring:
Manhood is king!"

The President called upon Mr. A. I. Root to say a few words.

Mr. A. I. Root—There is nothing more need be said to-night except you know in what hearty accord I am with all that has been said here by Mr. York. Some time ago I was down to a Lancaster Conference, and they were holding a temperance day, and there were three governors there. They called upon me, it was pretty

late, and they said—I had to say something. I think I said this, "Gentlemen, I am not only glad to be with you, but God knows I am glad to be one of you. God bless you."

The toasts being ended Dr. Phillips and Mr. E. R. Root gave their stereopticon and moving picture exhibitions, illustrative of the addresses which they had given on Tuesday evening, which were received with applause.

The Convention adjourned to meet Thursday, October 15th, at 8:30 a. m.

THIRD DAY.

Morning Session.

Thursday, October 15th.

At 8:30 a. m. the President called the Convention to order and said: We have with us Mr. Paul Mecewitz, of Finland, and we will be very glad to hear from him for a few moments.

Mr. Mecewitz—Mr. President, Ladies and Gentlemen: I think everybody who is interested in bee-keeping in foreign countries would like to hear something about bee-keeping in Finland. I think that is the reason why Mr. Holterman, my first and skillful teacher in the art of bee-keeping, made the suggestion that I should tell you something about bee-keeping in Finland,

You had yesterday a discussion about using eight frame or larger hives. I think somebody may ask me: Do you use eight or ten or twelve frames in Finland? We have three different systems of bee-keeping in Finland. The oldest and most general is a system where the old-fashioned straw skip is used. It is used by many of the farmers. They do not read any bee-papers; they just use the methods that our fathers and grandfathers used. They select a number of hives in the fall and deaden the bees by fumigating with sulphur or something else, and then cut out the combs and press the honey out of them, or melt the combs and separate the honey from the wax. Then the other method is the German method; that has been imported through the German papers. Some of our bee-keepers went to Germany and studied the German methods advocated by some of the German experts. The youngest generation in

Finland think that the American methods are the best, from the results that have been obtained from the systems used by the most prominent bee-keepers of the United States and Canada. The American methods were imported to Finland mostly through the Bee Journals, such as "Gleanings in Bee Culture," "The Bee-Keepers' Review," and "The American Bee Journal." I think the editors of those Bee Journals know that there are not very many subscribers in Finland, but that is due to the fact that there are not many bee-keepers in Finland who understand English enough to read English bee-papers with profit. Still, the few who are able to read them communicate with other bee-keepers and tell them about the new methods employed in America.

Now, I think perhaps you would like to know why I am here in America. I left Finland for a couple of years. I made up my mind I would cross the ocean and learn the modern methods of bee-keeping here and study here for two or three years, and then go back and start in with the old apiaries. Our climate is different from the climate in Canada and the northern part of the United States; it is colder, and we have longer winters and more snow. We used to have very severe frosts in the spring and fall; and the latest reports tell me that in a large part of Southern Finland there is practically no clover crop; it is almost all spoiled by the frost. Of course, there are years when a bee-keeper can have surplus honey and enough to make the business profitable, too. I heard from a man who, this year, although it is a poor season, has fifty pounds per colony of white alsike honey. We can depend upon two crops, the clover honey and the heather honey. I don't think there is any heather honey in America to speak of, but almost everybody knows that they have heather honey in England and Germany, and in different parts of Europe.

Mr. Stuart—How do you winter your bees?

Mr. Mecewitz—As far as the straw skip method is concerned, these are wintered out of doors. The skips are provided with a mat of straw, or I have seen them cover the hives with snow, and it is supposed to be nearly the best thing that there is. Of

course, the bee-keepers have to look out for warmer weather and remove the snow before it melts. I have never heard of anybody who wintered his bees in cellars. All our bees are wintered outside.

Mr. Stuart—How long do you confine them?

Mr. Mecewitz—I think they have the very first flight in the spring, in April, and some times earlier, perhaps; and the last, I think, is about October. It depends upon the season very much.

Mr. Cavanaugh—When your bees are working on heather, are they any crosser than when working on clover?

Mr. Mecewitz—I have never noticed that the bees were crosser on heather than any other crop.

Mr. McEvoy—Have you foul brood?

Mr. Mecewitz—Yes, but I am glad to say we haven't any wax moths, and we are not anxious at all to see them.

Mr. Stuart—Do you extract heather honey?

Mr. Mecewitz—Yes, and we are compelled to perforate the old combs; that is, we uncap with the uncapping knife and use a pin brush, and put it right through the comb, so that pretty nearly every cell is perforated at the bottom, so that the air can pass through, and the honey comes out easily.

Mr. Pressler—Doesn't that seem to injure the comb?

Mr. Mecewitz—It does somewhat, but if the comb is wired it won't hurt it very much, and the bees fix it up soon enough. We use the shallow frame mostly for extracting. I don't know whether a deep frame would stand it or not.

Mr. Armstrong—Do you use any of the Holterman hives over there? (Laughter.)

Mr. Mecewitz—No. I have seen a ten frame.

Mr. Jeffrey—For how long does this heather plant blossom?

Mr. Mecewitz—That depends on the season, when it begins to bloom, I think heather honey begins about the middle of August and runs some times till the middle of September. Heather honey is very much dependent on the seasons. Some times we don't get it at all. I heard one bee-keeper say he

could depend on heather honey only once in eight years.

Mr. Jeffrey—What kind of honey is it?

Mr. Mecewitz—A very thick honey. It is not as good as white honey, but still we get the same price for it. It is a little brownish in color, but not as dark as buckwheat. (Applause.)

The President—We also have with us Mr. W. D. Wright, who is not only a member of this Association, but comes as the special representative of the State of New York. We would be pleased to hear from him.

Mr. Wright—I can only say that the Department of Agriculture in New York State is taking quite an interest in the bee industry, as they have shown by appointing four Bee Inspectors, who receive their expenses and an annual salary, which is quite liberal as compared with some other States I have learned of. We are, of course, working along other lines as well as foul brood. We are trying to post the bee-keepers on the best methods we know of in the production of honey, and to work the apiary outside of the foul brood business. We try to prepare them in advance for the reception of foul brood in their apiaries, as in some cases, where it is raging in the near vicinity, it is quite liable to run into the adjacent territory, and by getting the bees in shape and Italianized, they stand a much better chance of warding off the disease and in treating it after it gets into the apiary.

Mr. Holekamp—Do you expect Italian bees to help or assist in preventing foul brood more than any other race?

Mr. Root—I certainly do. I have recommended for years the Italianizing of bees in advance of foul brood. This European foul brood seems to extend somewhat similar to a tidal wave and much less in the Italian race than other races. I know of one apiary of bees in my territory that was Italianized before the disease reached the yard, and while other yards all around that apiary were nearly wiped out, this yard came through with not more than a dozen diseased colonies in any one year. It was a yard of from 100 to 200 colonies and was producing honey right along.

It is the three banded leather color-

ed Italians that I recommend; I don't care so much for the goldens.

Mr. Davis—Do you find the three banded goldens as good producers as those you call the leather backs?

Mr. Wright—Not with me. I was foolish enough to buy fifty queens of a strain recommended by certain pretty good honey producers, and I didn't get anything from those queens. After trying them for a year or two I put them out as quickly as I could and put others in.

The President—The next thing on the program is an address by W. J. Manley of Sandusky, Mich., on "Turning Winter Losses Into Profit."

Mr. Manley addressed the convention on the subject for some time in a humorous strain before he got down to the serious side of the subject, and requested the reporter that he should not make a note of what he said, but some of his remarks which were applicable to the subject follow. He said: How do I make anything out of the bee business? Take five years ago—the winter we had so many heavy losses up through our part of the country—I found myself in the spring out of bees. The winter before I had put away 225 colonies packed in chaff hives and well protected with a high board fence, and I had expectations that I might winter them. But that spring I had no bees left. They were covered up all winter, and I thought from what I had read in the Journals that it was all right, that they would come out all right. Along in March we had a thaw, and I remarked to my wife, it is a wonder the bees are not breaking out a little. I went out there and I found the whole yard dead. I felt a little bad about it, but she said, we will go to work and make up the wax in the yard. We got a steam press and melted up the wax; we got it out in due time—three or four weeks—and we shipped it and it brought us in quite a nice little lump of money. She said, I don't care if we could keep up with that business quite a while. I said, there is so-and-so over there, maybe I can get his combs and make them up. I went over and asked him. He said, yes, I will sell them. He said he would take \$140 for the bunch. I agreed to give it and we took his combs and melted them up and I made a good thing out

of it. I bought another lot and did the same. I gave my wife half of the profits, and she got so fond of it that she tried to make out she even liked the smell of that wax press on that stove. She said, let's send and get another press and we will get the wax out that much quicker. We did so. It went on, day after day, week after week and month after month and we made sufficient profit to buy a new press. We went on and worked away; I was farming and my wife running the press. That came up to haying time—the 4th of July—and she said, we will have to quit this, I want the stove to cook on. I figured up and I found we had shipped \$970 worth of beeswax. I just began to realize what I might have done if I had gone at it in a business-like way. We gathered up that much within a radius of ten miles. My brother was at it also, and he gathered up nearly as much as I did, and the wax we gathered up around there brought us in over \$1,500. We found lots of places where it was too late; they had ploughed it under or burned it up. In the meantime I had taken \$350 of this money and purchased 100 colonies of bees, the rest was in the bank, and I took particular pains to have those bees in my yard just before the opening of the clover flow. To cut it short, I took \$1,200 worth of honey off that yard that year, and at the end of the season when I came to figure up the net receipts in my business just as a side issue and compare them with the receipts from the farm, which was my main issue, the thing looked so lopsided I didn't know what to make of it. I showed her the figures. Here was the bee business with over \$2,000 worth of business done on the side, and here was the farm and only \$900 worth of business. She said to me. It looks like a clear case of the tail wagging the dog. We have not been able to duplicate that every year right along.

The President—I should hope not.

Mr. Manley—Don't think I took advantage of my neighbors, I just took advantage of their losses. I always paid ten cents a hive for their combs, and they were well satisfied and I was well satisfied.

Another point I took notice of that fall. In speaking of the foul brood

problem some one remarked that there was no use of our being so vigilant with our own bees if our neighbors allowed their bees, which have foul brood, to die and let their combs stay there. If you do not look after his combs and get him to melt them up your bees will visit and rob his bees out and bring the disease. Let me say that if you just exercise a little common sense and go over and buy up his combs, you could clean up on him in nice shape, and it would pay you well. I question if I haven't cleaned up more foul brood than our state inspector. A neighbor wrote me he had one hundred colonies of bees to sell, to come down and buy them. I waited a while and then he had only sixty. When spring finally came he had a fine sample of foul brood. He said, What in the world will I do with these old combs? My brother said, Sell them to Will, he will handle them. He said, What will you give me for them. I says, I will give you 25 cents a hive straight through. He said, You can have them. I said, Will you help me cut them out? And he said, You bet I will. I went home and got my galvanized tank and we got them out, and in two and a half days I cleaned up \$57.

We buy bees all over the country, and our neighbors wonder how we can keep in the bee business year after year and still make it pay. We wonder how in the world these beekeepers who never lose their bees can possibly avoid becoming millionaires.

I am an extracted honey producer. I did, before I knew better, run for comb honey; I adopted the plain sections and all these things as they came along. I had the bee fever. Those that have the fever are out of their heads about half the time. I have eliminated all these expenses and am willing to accept bees in any kind of hive. This work is done after supper; you can put a hundred sets of combs in an hour's time. We learn from Mr. Doolittle that there is nothing about the apiary that you should value so much as empty combs. In this way we have the expense bill almost entirely eliminated, and what we get out of the business seems clear profit. I only had fifty colonies this spring and I have sold a trifle over \$700 worth of honey from those

colonies. It has simmered itself down to a business proposition with us. Dr. Phillips called our attention to the amount of loss there was in the wreck. After we have lost our bees there is half enough in that wreck, if it is properly looked after, to replace the loss. What wax will there be in a ten-frame hive? Dr. Phillips said four pounds. I didn't get that. Then there is always considerable honey. Every pound of that is utilized and marketed. The bakers will take every pound of it.

Mr. McEvoy—Was the comb built out of foundation?

Mr. Manley—Usually the natural comb. The bees we buy as a rule are on natural comb.

Mr. McEvoy—You wouldn't get it, and Mr. Phillips would be right if it was foundation.

Mr. Manley—I melted up the comb from one hundred nine-frame hives once that were shipped from Kentucky up here, and they averaged three pounds. I think I get it out pretty thoroughly. It is no trouble to keep any amount of extracting combs over that are used from season to season. If I have a surplus I turn that into combs. I have a cellar that I built on purpose to keep my bees in, and it is an ideal place; it is above ground and it is built of brick. It cost me \$250 spot cash and my own labor. It is moth tight and bee tight. There is no trouble to keep moths from combs that you are using from season to season. I have never had to sulphur my combs. If I have a surplus of combs I melt them into wax. We always hive our bees on full sheets of foundation wired in. I just leave seven in an eight-frame hive.

Mr. Coveyou—What would Mr. Manley be willing to pay for his bees if they would live?

Mr. Manley—I did winter through a few bees last winter and I have actually sometimes been sorry I did not clean them up, because they were kind of weak and depleted.

Mr. Coveyou—Why do they get weak?

Mr. Manley—I am right on the open prairie between the bay and the lake, and they spring dwindle.

Mr. McEvoy—Don't you think

spring dwindling is the fault of bad management?

Mr. Manley—Yes, I said these losses were the result not only of bad stores and poor protection, but bad management as well.

Mr. C. F. Smith—Don't you think if you take all the honey away from these bees and give them nice sugar syrup that they will winter all right in your locality?

Mr. Manley—Possibly it would work. We haven't tried that plan yet. The aster honey which is so deleterious comes late in the fall of the year.

Mr. C. F. Smith—I live two hundred miles north of you, and that is the only way I can ensure my bees.

Mr. Manley—Thank you, Doctor. I have tried feeding sugar on top of the honey they already have, adding to their stores, and that helps some.

Mr. Coveyou—Don't you think if you could get your bees shock on to all full sealed stores of sugar syrup or honey and shake them on to five and six frames they would winter all right? If they don't there must be something wrong with it distinctly.

Mr. Manley—Have you tried that plan?

Mr. Coveyou—Yes, I know it will work.

Owing to the absence of Mr. E. D. Townsend of Remus, Mich., the paper on "Locating Apiaries" was not given.

QUESTION BOX.

Mr. Taylor—Isn't the quality of the stores the whole key to wintering? I have contended for years that cellars and packing and all that sort of thing didn't solve the question at all; it is a question of feed. We used to have a good deal of trouble here in wintering bees because we had swamps and we had fall honey. Our swamps are getting cleaned up now and we don't get fall honey and our bees winter.

Mr. C. F. Smith—The store problem is not the whole one in the extreme north where they have six and a half months of continual confinement in such a hive as that. With good winter stores, with sealed syrup, if you use a cover over them they will drown before the six and a half months are out. We leave them in the yard. It has been six years since

I carried a cover into my bee cellar. If the bottom drops off I leave it.

Mr. Taylor—Wouldn't leaving the bottom off be just as good as leaving the cover off?

Mr. C. F. Smith—Not quite. I leave the cover off and if the bottom drops off I leave it off. When we leave the tops off we put a burlap over the hives. I don't care anything about what the temperature is.

Owing to Mr. Hershiser wishing to leave early, his paper was taken at this stage and the discussion of the question box allowed to stand.

Mr. O. L. Hershiser read his paper on "How to Secure Good Prices for Honey even in Years of Bountiful Yields," as follows.

HOW TO SECURE PRICES FOR HONEY EVEN IN YEARS OF BOUNTIFUL YIELDS.

By O. L. Hershiser, Kenmore, N. Y.

If an unusually large quantity of any commodity is produced, and is thrown upon any particular market in a lump, the price will necessarily fall, owing to competition, and the eagerness of holders to realize on their goods.

If such unusually large quantity of the commodity is distributed in such manner as will supply localities that have had an under production; or if the disposition of the same is spread out over a considerable length of time, keeping a portion of it out of the market until a season of scarcity if necessary, or if new markets are created by reason of increased activity in discovering as many as possible of the latest avenues of consumption, directing, as it were, the product into new channels, and creating a need where need was before unfelt, there is no need to greatly reduce prices in order to sell the goods.

I wish to apply the above propositions directly to honey production and consumption. If the apiarist is so fortunate as to have produced a large crop of honey, he should get busy in search of new markets. If his crop is 50 per cent more than he has been accustomed to produce, he has just

that 50 per cent with which to work up a new market and create a demand that will be of value in years to come. Suppose he has to carry a portion of his crop over to the next year; it is almost as good as money in the bank, and may yield a much larger percentage.

Mr. Mercer of Ventura, Cal., because of unsatisfactory prices, in the year 1903, held his honey until the following year, and thereby realized \$1,000.00 more for the crop than would have been obtained if sold as soon as produced.

When prices of honey are abnormally low, there is no speculation in holding the honey a year or two, and the more bee-keepers there are who are determined not to sacrifice their honey because of a bountiful crop, and low prices, the more stable will the market become.

In the last issue of the Review, editorial notice is made of a bee-keeper, who had been offered 7 cents for the best White Clover Honey that could be, it would net him but a trifle above 5 cents per pound. I wish to say, that the apiarist, as a class, is largely responsible for such market conditions. The jobber is always anxious to purchase goods at as low a price as he can obtain them, for the reason that his profits are correspondingly greater, and because of the lower price at which he is able to sell, he can do a greater volume of business. He sends out offers for honey, and quotes the current jobbing price of 5 to 7 cents, and in most years is able to supply his wants at these figures. Then, not being a philanthropist, why should he give more?

Once in a while there is a bee-keeper who does not figure the expense of cans and transportation, and thinks one-sidedly only of the 7 cents per pound he is going to obtain. Rather than take 5 cents net from the jobber, the bee-keeper reported by the Review would better sell locally to consumers direct for 7 or 8 cents, and thus save the expense of his cans; and what could not be sold locally, might be disposed of at satisfactory prices by a little well directed advertising. Personally, I do not believe it to be ever necessary to sell honey direct to the consumer at less than 10 cents per pound. I reason that

any lover of honey will supply his needs to the limit at 10 to 15 cents per pound in bulk inasmuch as 10 to 15 cents is a popular price. Lovers of fresh butter in the cities and villages satisfy their wants at 25 to 30 cents per pound, simply because that has come to be the popular price.

If you have honey to sell, but keep still about it, disposing of it will be slow and tedious. There are various ways of directing public notice to the fact that you have honey to sell. If you imagine that a bountiful crop is to be a burden, remember that the local fairs bring together large crowds, among which are many lovers of honey, who will be as glad to learn where they can get it in its purity, as you are to sell to them. Be on hand at these fairs with an exhibit of bees and honey. Show how it is extracted, and impress upon the willing listeners that honey production is your business, and that being a specialist, you are able to produce it of a quality as fine as bees can make it. Allow prospective purchasers to sample it. Many of you who have exhibited at fairs will bear me out in the statement, that a taste of the honey, to a somewhat doubtful inquirer, will almost always result in a sale, if the quality is what it should be. Have some attractive cards with your address and an announcement of your business of honey production, ready to hand to all inquirers. Customers gained in this way are likely to purchase of you year after year, and after you have established a trade at a fair price, you will not need to lower it, even if you and others have a bountiful crop. If you think you could take naturally, to the temporary occupation of a show man or slight of hand performer, operate a colony of bees in a cage, a la root, to attract a crowd, and have your salesman ready to sell the honey as the performance proceeds, and while the on-lookers are spell bound.

If you have a good crop, remember that your brother bee-keeper in other localities may not be so well favored. All bee-keepers who have been in the business for years have a certain steady demand, sometimes reaching into thousands of pounds. They do not wish to lose their trade, and if they allow some other person to pick

it up, even for one season, that other person has gained the customers for the future, and you have lost them.

No better advice can be given to bee-keepers who intend to make apiculture a business, and who have had a short crop, than to purchase honey of reliable bee-keepers to carry them over seasons of failure. There is no better way of reaching this class of customers than advertising through the journals. Write up a neat advertisement that will catch the attention of those in need of honey, and have inserted in two or three of the leading bee journals for three or four months, and your honey will be sold with little effort. If you are unaccustomed of writing advertisements that will catch the attention, remember that the publishers are only too glad to help you, or write them for you, and they have a vocabulary well stocked with expressions, words and synonyms that will express in the superlative degree the quality of the goods you have to offer. "Smooth oily finish," "thick, rich deliciousness" and the like, are expressions descriptive of the highest quality and catch the eye and thought very readily. There is no copyright on words that will beautifully describe your honey, and their use should be freely resorted to—only remember that the statement should be invariably in accordance with the fact, or their use is a positive injury to you by way of the loss of every customer who purchases on the assumption that your goods are really superior. There is no secret in connection with the production of honey of superior quality. Just leave it with the bees, until thoroughly capped over, or until the end of the season, and the quality will be perfectly satisfactory.

A few bee-keepers have built up a good business in selling honey by canvassing from door to door direct to families. This method is to be highly commended, as it gives an opportunity to educate the public in reference to bees and honey. Having such an excellent food product of his own production, no bee-keeper should hesitate as to the propriety of this manner of selling. I am informed that a number of bee-keepers of more than ordinary business capacity have made a good success of this manner

of selling. Never having had occasion to sell in this way, it is largely a matter of theory with me, but I am convinced that customers thus gained will purchase of you year after year. A number of bee-keepers have obtained good results from advertising in their local papers.

There is one thought I desire to very strongly impress upon you. If you have a bountiful crop, do not get panicky about it, and offer to sell regardless of price. It is never necessary to do so. Let bee-keepers be determined to obtain a fair price, and not compete against each other unfairly, and the normal demand will be well supplied. If there is a surplus over and above, for which there is no demand, at a fair price, carry it over to a year of scarcity. You will thus have nearly as much money as though you sacrificed the whole crop; you will have been spared the real misfortune to yourself of having broken and ruined your market, and you will still have the surplus over and above what is required to fill the normal demand, to supply your market in years of scarcity that are sure to follow.

Suppose a bee-keeper's normal crop is 10,000 pounds, and in normal years the price is 8 cents per pound wholesale, his income from the honey crop will be \$800.00. Suppose he obtains a bountiful crop of say 1,500 pounds or 50 per cent greater than the normal from the same number of bees. A slight decrease in price in such season of bountiful crop would be no injustice to the bee-keeper because the additional expense and labor of producing it is less, in proportion, than that of producing a normal crop. A slight decrease in price might also be charged to the increased supply, but don't let us ever have a panic, because of a bountiful crop, and lose all the latent benefits that nature has showered upon us. If we are to drop the price from 8 cents in the normal year to 6 cents in the bountiful season, when there is an increased crop of 50 per cent, we have lost every advantage that was ours, but which has been too often sold for a "mess of pottage." Therefore, I emphasize in the most emphatic manner that you try not to sell to a glutted or unwilling market, but carry over that which may not be sold for a fair price, and in the meantime, keep busy in de-

veloping new markets, and outlets for the increased production. A good rule is to sell where there is an anxiety to purchase, and waste no time trying to sell where there is apathy, and indifference, and a bearish tendency as to purchasing.

The good services of the jobber and wholesaler are always to be recognized, and it is certainly no reflection on them, to advise bee-keepers to develop their home market, and supply it fully before shipping to the larger centers of consumption. If the home market is fully supplied, there will be less honey to be disposed of by the jobber, it is true, but if the jobber's volume of business is thereby lessened, he is compensated by better prices and profits on the smaller trade.

I would beg of bee-keepers to avoid the tendency to get into a scramble, and cut down the price of their honey to ruinously low figures in order to get the preference of sale away from other bee-keepers. I have but recently been informed of a case where a bee-keeper sent a consignment of honey to a commission merchant with instructions to sell at 10 cents per pound if it could be obtained, and for less if necessary to effect a quick sale. There is certainly no profit in producing fancy comb honey at 10 cents per pound, out of which is to be paid, freight, commission, and for sections, foundation and labor. The consumer is sure to pay from 15 to 25 cents per section for fancy honey before it reaches his table, and 10 cents for fancy comb honey with charges and cost of supplies out, leaves the producer but a little over 7 cents per section. The difference between about 7 cents and 15 to 25 cents per section goes to the jobber and retailer by way of trifling expenses and big profits to the non-producer of the goods, by reason of the conditions created, in large part, by the bee-keeper who is determined to sell, whether he makes any profits or not.

Let me urge you, brother bee-keepers, to follow the example and teachings of a few of the craft, who have, as far as possible, solved the problem of marketing their product you have battled against great odds. You have done well to persistently remain upon the firing line until your crop of

honey is safely harvested, but having emerged from the smoke of the battle of obtaining the crop (the smoke from the bee smoker of course) do not be satisfied or claim a complete victory until crowned with the full reward of a just and merited equivalent for the purest and most wholesome of sweets, honey, you have provided for the tables of the land.

Mr. Harmer—I endorse fully the house to house canvass in selling honey. I have canvassed one city for twenty-seven years, and I have never had enough honey yet; so I would encourage that kind of sale.

The President—We have some reports of Committees, and invitations have been sent in for the next place of meeting. Shall we receive these invitations here, or shall they be sent to the Executive Committee? What is the desire of the Convention?

Mr. Pressler—There is no reason why the invitations should not be received here.

The President—Shall we take the time to receive the invitations here, or shall they be turned over to the Executive Committee?

Mr. Holekamp moved, duly seconded, that these invitations be received here and then turned over to the Executive Committee.

Mr. France—I would suggest that later on other invitations that may be given be also forwarded to the Executive Committee for consideration.

The President put the motion, which, on vote having been taken, was declared carried.

Mr. Holterman—I believe that the thought has been advanced at different times that the National is not international. It is an international Association and takes in the Dominion of Canada, and there have been a number of bee-keepers who have spoken of the desirability of having the National meet in Canada, and I am quite sure it is in accordance with the wish of the Canadian Bee-Keepers that it should meet in Canada. Therefore, on behalf of the Canadian Bee-Keepers, I would extend an invitation for the National to meet in Toronto next year. We can promise to you a good free hall if you will come there and one which will be entirely built and constructed, where the carpenters won't be ham-

mering and sawing while the Convention is going on. (Applause.)

Mr. Davis—I second Mr. Holterman's proposition.

Mr. Hershisier—Mr. President, I wish to read a letter here on behalf of the Buffalo Chamber of Commerce. This letter was sent to me unsolicited. (Reads letter extending invitation to hold next Convention at Buffalo.)

The Convention Hall there mentioned is a hall considerably larger than this one, and it would not be a very suitable place to hold a Bee-Keepers' Convention, but there are lots of halls in Buffalo. I think you all know that Buffalo is a nice place to meet, and any further remarks from me would be superfluous.

Mr. Muth—Mr. President, The Central Tennessee Bee-Keepers Association, of Nashville, Tenn., is a body of Bee-Keepers that are very much alive and up to the minute. They extend to you an invitation to meet in that beautiful southern city of Nashville. Nashville is a very interesting city, and the hospitality that is extended to everybody by the southern people is well known and cannot be excelled. I have a communication here from the Central Tennessee Bee-Keepers' Association, and I have also a communication dated October 1st which was sent to me by the Nashville Board of Trade, which I will read to you. (Reads letters.)

I might say that at the Tennessee State Fair this last September, and September a year ago, the Tennessee State Bee-Keepers' Association had, I believe, about the prettiest exhibits of honey and bee supplies and showed more enthusiasm than I think I have ever seen at any place to which I have gone. I have seen exhibits at different fairs, but this took my fancy very much. I assure you that they would make you feel very much at home, and when your Executive Committee decides the matter I trust they will give Nashville their sincerest consideration. This part of the country has had many Conventions, but in this part of the south you will find you will receive better treatment than you did in Texas, and it is nearer home.

Mr. Hershisier—Mr. President, I want to say a word or two about conventions and people who attend them

largely. It is well known that people in this part of the country from the Mississippi River east and from the Ohio River north are good hands to attend Conventions, and a good many of us have gone to a great many conventions. I have not missed more than one or two in the last fifteen or twenty years. One year we went clear across the continent to Los Angeles—a carload of us, and there was more than a carload—some went without going in the car—some walked. All these people came from east of the Mississippi, but how many people have we got from beyond the Rocky Mountains or beyond the Mississippi River that come east to these Conventions? How many people have we here from Texas and south of the Ohio River? I think it is a good deal better for such who go to the conventions every year not to be called upon to go so far. It would be different if these people came up and visited us, but we don't want the visiting to be all one sided.

Mr. Muth—Mr. President, the Brother's point is well taken. However, I want to say to you for the Brothers down south that I know a gentleman, and I believe Mr. Root met him, who is not 32 years old, and he has raised 70,000 pounds of comb honey this year, and he is not the only one. There are many of them down south; and these old taggers, like the gentleman who spoke, and a couple more there, ought to go down south to get acquainted with these kind of fellows. While Detroit is the best City to hold a Convention in that I have ever seen, and while I know that Buffalo is a fine city, still, you have got to do a little missionary work to get those fellows to come closer to you. There are any number of bee-keepers down there that do not raise fifty or two hundred or a thousand pounds, but they raise carloads of honey. They don't feel like coming up to Buffalo; they have got to put on too many fine clothes to go shopping.

Mr. Hershiser—With reference to the man that raises 70,000 pounds of honey, I think that is so much more a good excuse why he should be here. (Applause.)

Mr. France—For the good of the Convention, I will say there has been forwarded to me invitations also for

other places besides those mentioned here for the Committee to consider later on, and the most of these have come from western points. When we met in California there was a large gathering, almost the equal of this one, and midway between there and here they are expecting to have a big gathering next year. Salt Lake City has an invitation in, and Kansas City has one in, and Nashville, Tenn., also had an invitation in some time ago. We would like an expression of the members. The Grand Army meeting is going to meet in the west next year, and there will undoubtedly be a special rate.

The President—The Executive Committee will have that under consideration.

Mr. York—This matter of the selection of the next meeting place is in the hands of the Executive Committee. We don't just like to be told where to go every time. It seems to me after going to San Antonio we should have had representatives here from Texas and other States; it was a long trip down there. It is too one-sided. I think there is only one representative here from California, and he happened to be here visiting. It seems to me it is not fair. If they want us to meet in their parts of the country they ought to be here. We cannot go visiting their way all the time, and neither can we go east or west all the time. It seems to me we ought to go to different parts of the country where more bee-keepers are. We never have been to St. Paul or Minneapolis; we have never been at Des Moines, Iowa, or Kansas City; and it is also true we get larger attendances when we stay about this latitude east and west. If we go further south or away west we do not get the attendance we do here. It seems to me the Convention ought to keep within three or four hundred miles of this latitude.

The President—I fully endorse what Mr. York has said. We went to San Antonio, Texas, and they gave us a hot time down there, but there was not over half the attendance there that there is here now.

Mr. Holekamp—It is desirable wherever we go that we get low rates. We went to San Antonio from St. Louis for less money than it costs us to come here. A good many of us

will go anywhere. I like the trip and I enjoy it. There are a good many people will not go when it costs too much. That is something to be considered in deciding the place of meeting.

Mr. Holterman—There is one point in connection with Toronto, that if it is held during the time of our Exhibition there are excursion rates at less than one fare; it is a very favorable spot indeed for a convention, and is not so crowded as the cities are where the Grand Army meeting is held.

The President called for reports of Committees.

Mr. Holekamp read the report of the Committee on Exhibits as follows:

REPORT OF COMMITTEE ON EXHIBITS.

We, the Committee appointed to judge the exhibits; find as follows:

Best ten sections of comb honey:

(1) Clyde English, Manchester, Mich.

(2) C. T. Foote, Ridgeway.

(3) Leon C. Wheeler, Barryton, Mich.

Best ten pounds of liquid extracted honey:

(1) Leon C. Wheeler, Barryton, Mich.

(2) Ira D. Bartlet, East Jourdan, Mich.

(3) John C. Bull, Valparaiso, Ind.

The most important late apicultural invention:

(1) Iplet Section and Compliances—J. E. Hand, Birmingham, Ohio.

(2) Beehive—L. A. Aspinwall, Jackson, Mich.

(3) Hive Lifter—J. E. Hand, Birmingham, Ohio.

Best single section comb honey:

(1) Clyde English, Manchester, Mich.

(2) C. T. Foote, Ridgeway.

(3) Leon C. Wheeler, Barryton, Mich.

(Signed.)

WM. McEVOY,
JACOB HUFFMAN,
R. A. HOLEKAMP.

Mr. France—Mr. President, the National Association had placed in its hands, you remember, a fund of \$1,408 called the league fund for the adver-

tising of honey. Several have asked what has been done with it. First, we were requested to make an exhibit of honey from the various states at the World's Pure Food Show in Chicago last November, which I superintended, with the help of Mr. Hutchinson, in arranging, and we have made that display. It cost us \$343 for floor space; then there was express on honey from eighteen states and five foreign countries, together with a little board bill and local expenses, which ran us about \$589.23, and the premium was the first prize, highest award of the World's Pure Food Show for honeys, which we won. (Holding up the Pure Food Show diploma.) (Applause.)

Following that, the Association used \$151.26, through this fund, advertised a prize of \$5 each for articles properly adjusted, a certain number of words, advertising the use of honey. A sample copy of these different articles, for which we sent out \$50 in money to the writers of them, has been forwarded to each member with an offer that we would furnish any member with as many more copies as they wanted at the actual cost of printing, and I am sorry to say there have been very few of those calls. This was done with the idea of introducing and of helping to create a demand for honey. The balance, \$600, of the funds is yet in our hands for advertising, but we think there seems to be an indisposition on the part of the members to co-operate with this Committee, and we are handicapped to know what to do with the balance. It is not being wasted, however; it is where it is safe.

Now, another thing, it was my hard task to count the nominating ballots a little time ago, with the assistance of others; and the way in which our members have sent in the crop reports and nominations shows that we are at a loss to know what we are doing. Some change ought to be made, and I shall recommend some amendments to the constitution on that point before we get through. As an illustration—you may not be able to see this paper which I hold in my hand—but the first column is for those who are nominees for President, the second for Vice President, and Secretary, and Manager, and the next three columns are all for Directors.

In the column for Directors one man who is now a Director and whose term does not expire for some time had 108 votes, more, by fifteen votes, than anybody else got. That is all lost. True, we all think a great deal of Mr. Doolittle, but he is already a Director, and why 108 throwing away votes? Some way our members should know a little better what they are doing when they are voting.

Mr. Holekamp—Mr. Chairman, the Board of Directors are now elected by vote of the Association. We have in Missouri about between 135 and 150 members. I know that there are very few amongst them who know for whom to vote; at least, they write to me and send me their postal cards and ask me to fill them out because they don't know who to vote for. I have brought this before the Association before, and if any change is to be made in the election of Directors I believe it would be better to have the Association in the different states that have 100 or 150 or 180 members entitled to elect one Director. The Associations know their own people, while we at large know—those who have been at this Convention—for whom we wish to vote. Those Directors should hold a meeting at the Annual Convention and those Directors would be expected to be here and deal with such matters as would be of importance. As it is to-day, the Board of Directors is only elected as an honorary body; they have nothing to do.

Mr. Pressler—Abolish them then.

Mr. Holekamp—No. I believe it would be well for the Association to elect them because there is a good deal of work for them. There are states which have no bee laws. I have bee-keepers in other states who apply to me for membership in the Missouri Association because there are no associations in those other states. There is a good deal of work that can be done; if we had a Board of Directors who would meet at the Annual Convention, then much more work could be done than in a large meeting, and I believe we could accomplish something which at present we cannot succeed in doing. Unless all the states have foul brood laws it will be impossible for us to get rid of the disease. Illinois has a law which is not effective; Iowa has

no law; Arkansas has none; Kansas I understand has a law; but all these different states ought to be worked up; we ought to try to get Associations there which would go hand in hand with us, and we should get uniform laws so that we could get rid of this disease which comes to us again when we get rid of it in our own states.

Speaking of Iowa, right along the border of Missouri there is considerable disease I understand. How can we prevent the affected bees coming over our border? We have a fine of \$25 on the importation of diseased colonies of bees or the appliance containing the germs of the disease in our state, but it is hard to enforce. What we need is an apiary law in every State and Inspectors in every State so that we can get rid of this disease. I believe if we had the Directors elected by the different State Associations they would feel more interested and we could accomplish more.

Mr. Muth—I have listened to what Mr. France has said about spending money for advertising. That one effort cannot bring results even if it cost five or six hundred dollars. You have got \$1,500. Why don't you spend it all in advertising? Do it all at once or in succession until you have got it spent, and see what money you will make. One swallow doesn't make a summer, and we learn by the papers that one advertisement won't make results. You have got to advertise and advertise.

The President called upon the Committee on Resolutions to present its report.

The Committee on Resolutions presented the following report:

REPORT OF COMMITTEE ON RESOLUTIONS.

We have met again, in one of the largest conventions that the National Bee-Keepers' Association has ever held, and it would seem very appropriate for us to express our thanks to the Officers of the Association who have worked hard to make our meetings what they are, and also to the management of the Hotel for the accommodations that we have enjoyed.

Therefore, be it Resolved, That the thanks of the Association be extended

to the management of the Wayne Hotel for the large room which they have placed at our disposal and for the many courtesies which have been offered in various ways.

Also be it Resolved, That our Secretary, Mr. W. Z. Hutchinson, be given a note of thanks for his untiring efforts in behalf of the Association and its Convention.

Be it Resolved, furthermore, That the thanks of the Association be expressed to the Secretary of Agriculture for sending three such able representatives—Drs. Phillips, White and Snodgrass—to render such valuable aid in our meetings.

In view of the fact that one of our Directors, Mr. E. W. Alexander, of Delanson, N. Y., was called from this life during the past year, it seems fitting that we express our regret, especially since he was so much admired and honored that during the last election he received votes for the offices of President, Vice President and Director; therefore,

Be it Resolved, That we as an Association express our thanks for the time and thought which Mr. Alexander so willingly gave us and our sincere regret because of the loss which we sustained when he was taken from us to that other Country; also, that a copy of this resolution be forwarded to his family.

(Signed) H. H. ROOT.
OREL L. HERSHISER,
J. L. BYER.

Mr. York moved, seconded by Mr. A. I. Root, that the report be adopted.

The President put the motion, which, on a rising vote having been taken, was declared carried.

Mr. France—With reference to the membership button, the Committee has suggested that the present button be changed for a button showing a bee more prominently than the one at present in use. I would ask that each one having a button should wear his colors and show his loyalty to this National Association.

The President—What will you do with the report of the Committee on Exhibits?

Mr. Scott moved, duly seconded, that the report of the Committee on Exhibits be adopted.

The President put the motion,

which, on a vote having been taken, was declared carried.

Mr. Bacon—I beg to move that Mr. Ernest Root be tendered a vote of thanks for coming here with his equipment and giving his interesting lecture and demonstration of handling live bees, which he gave on the first evening of the Convention. On account of his being Mr. Huber Root's brother I think it was intentionally left out of the report of the Committee on Resolutions.

Mr. Holekamp—I second the motion.

Mr. York—I think you should also include the exhibition of moving pictures given last evening.

The mover of the motion accepted the amendment, the President put the same, and, on a vote having been taken, it was declared carried

QUESTION BOX.

Question No. 1—Can one tell by the actions of the bees at the entrance at this time of the year whether they are queenless or not?

The President—I should say no.

Mr. Pressler—I will say yes.

Mr. Coggshall—Feed them a little bit and they will get uneasy around the entrance. You can tell better at night than in the morning.

The President—You produce the evidence; it is not natural evidence.

Mr. Pressler—Put your feed out in the yard and you can tell it every time.

The President—Then I agree with you.

Mr. Holterman—I would like to hear something about that.

Mr. Coggshall—A little bit of food will stimulate them. Put a little food with the colony and feed the one right next to it and see the difference. You can readily tell the difference. One will be uneasy around the entrance, and look at this bee and that bee as if looking for a companion.

Mr. Holterman—Aren't they more or less uneasy when you feed them in warmer weather anyway?

Mr. Coggshall—Yes, of course, only it takes experience to tell that.

Mr. Pressler—If I understand the question aright it is how to tell a queenless colony this time of the year.

The President re-read the question.

Mr. Pressler—Yes. Go to work and put out about 100 pounds of honey in combs, to clean up your combs or honey you want cleaned up, where you have a yard of 100 colonies, and let them go to work on that, and go along the row and see which ones are working freely, and, as Mr. Cogshall says, they stop and look at each other. Those that have sufficient stores will not fly rapidly and will not get as much excited as those colonies which are depleted in stores. Those that have the least amount of stores will work freely like they would in June, and those that are queenless will not work at all; and they will not fly much; they will fight with each other and look for trouble.

Mr. Holterman—That carries out the principle that a queenless stock never takes down syrup as well as one which has a queen, but I think the remedy is worse than the disease.

Mr. F. J. Miller—That is not my own experience. When talking to S. D. Chapman of this state in regard to this matter he told me that he could invariably tell a queenless colony between sunset and dark or in the morning as they were going to the field, not at other times during the day, by diagnosing the entrance; he would notice those bees that were restless and trotting across the entrance rather than going to the field in the morning, and at night he would see them there with a blocked appearance.

Question No. 2—Is there a bee man who has tried artificial heat in the spring to build up colonies?

The President—If there is no one here who has, I presume we can't answer it.

Question No. 3—How are we to proceed to recover stolen colonies?

Mr. Muth—Go and get them back.

The President—If the questioner knows where the colonies are and has a suspicion as to who carried them there, there is a process of law, and beyond that I know not.

Mr. Hershisier—I suggest that the party retain a lawyer.

Mr. Taylor—I suggest he put salt on their tails.

The President—Will the questioner state, if here, whether the bees in question were stolen or whether it was a swarm that had been taken by somebody else?

Mrs. Williamson—We had a colony, hive and all, taken from our bee yard, and we would like to know how to get it back.

Mr. Pressler—Would you advise to apply the law?

The President—Not if I could settle it otherwise. I would first go to the party and lay the case before them in a personal way and try to settle the matter.

Question No. 4—How can you control the swarming of bees? (No response to this question.)

The President—Our Manager has a resolution he wishes to present at this time.

Mr. France presented the following resolution: (By request.)

Resolved, That it is the sense of the National Bee-Keepers' Association that it is imperative for the continuation of the bee-keeping industry in the United States that the present tariff of 20 cents per gallon on honey be retained, and, if possible, that it be increased, so that the bee-keepers of this country will not be compelled to compete on the market with two and a half million pounds of cheap honey which is now annually imported.

Resolved, That it is desirable that beeswax be removed from the free list in the United States and that a tariff of not less than ten cents per pound be placed on this article.

Resolved, That it is the sense of the National Bee-Keepers' Association that it is imperative for the continuation of the Bee-Keeping industry in Canada, that the present tariff on honey be retained, and if possible that it be increased so that the bee-keepers of the country will not be compelled to compete on the market with the cheap honey which is now annually imported.

Resolved, That it is desirable that a tariff of not less than ten cents per pound be placed on beeswax in Canada.

Mr. Hershisier—Mr. President, I want to say that if the promises of the presidential candidates are to be carried out we are almost sure to be up against this question in a year or so. The tariff will, no doubt, be revised before very long, and the people who are looking after their interests will have to look after them, and those who do not look after their interests

will have to suffer at the expense of those who do. Therefore, I think we ought to be on the lookout for this thing. There is honey from the south and other places, and beeswax that comes in here to compete against our own. So I am in favor of maintaining the tariff we have on honey, and, as the resolution says, increase it if necessary or possible, because we do not want our little industry to suffer at the expense of such industries as the steel industry. I hope that every beekeeper will be on the lookout to do what he can with his representative in Congress when the time comes, to the end that our interests do not suffer unjustly or at the expense of other interests.

Mr. France moved, seconded by Mr. Holterman, that the resolution be adopted.

The President put the motion, which, on a vote having been taken, was declared carried.

Mr. France—As has often been said, we go, many of us, on long journeys to these gatherings, not for financial gain, but because of that mutual friendship which ties us together, and the remarks of Brother Hutchinson last night reminds me of the little button worn by our Grand Army men, and only those who wear it can know the bond of friendship there is between the men who served in that service. So with us, I hope we feel that this bee button is a token of membership loyal to one another. If perchance any of us get into trouble we know whom to go to. We would not for one moment see one of our members wronged. The appreciation of this was shown to me last fall at Harrisburg, and those of you who read the 1907 report know of the presentation. (Gold watch, chain and a set of silver spoons.) It is not its value, but the token of appreciation by its members will never be forgotten.

Mr. Muth—Mr. President, we are a lot of strangers in town and I think if we appoint a time and you appoint a Committee, that those who are left after the Convention is over would hire a rubber-necked wagon to see the City. It would be a very nice and appropriate thing for those who want to see this beautiful City. They say that "in Detroit life is worth living." It is just because the City is so beautiful. There are quite a number who

want to see the City, and if we could go around in a crowd it would be very nice.

Mr. France—As I said a little while ago in regard to this question of nominating and electing our officers, we all want to take a part and be a part of it, but we are not satisfied with the way our present constitution and by-laws are adjusted. It takes a year's time and we would have to wait until the next annual meeting before any suggested amendment could be acted upon, so that I would move that we amend our Constitution with reference to the election of Officers and Directors. It would have to come up at the next annual meeting, and the members at that time could vote upon the proposed amendment.

The President—You give notice at this time that at the next Annual Meeting such an amendment will come before the Convention.

Mr. France—Yes.

The President—That then becomes a matter of record.

Mr. France—As a word of explanation, you can see where I am handicapped. We have our Annual Election of Officers this coming month, and I am supposed to deliver to each member a full report of all the members and also a financial report. I confess I can't do it even though I work night and day. They are printing this week the pages of advertising matter, also the membership list with the crop report so far as they were in before I came away, and to get that out and deliver you a copy of that by the time the election of officers comes on is an utter impossibility. You have been for three years receiving the Annual Report after the election, for I could not get it out any earlier than I did.

Mr. Tyrrell—According to the program we still have one afternoon left. At the same time we have used up the program so far as it has been arranged. We have listened to some excellent papers and addresses, and yet at the same time there has been a good deal of our heart to heart talk that we have had to eliminate. Some time during the day there is to be a meeting of the Michigan Bee-Keepers to finish some business which it was impossible for them to finish at their session on the first day of the Con-

vention. Now, if there is nothing else on I would like to suggest to the Michigan Bee-Keepers present that we who convene at two o'clock extend an invitation to all the National Bee-Keepers to take up such subjects as may properly come before them at that time. I want to say that the question of the marketing of honey is one thing, and the competition of foreign honey is another thing that will

probably come up; there is also something to be said in regard to our exhibits at fairs, something that means dollars and cents to every producer. The thought occurred to me last evening, why not, through the question box, or otherwise, have a little free discussion together, not only of the Michigan Bee-Keepers, but the others as well.

On motion of Mr. Holecamp the Convention adjourned sine die.



List of Members Who Sent in Their Fees After Going to Press.

NAME AND ADDRESS.	No. Colonies of Bees, 1908.....	No. Lbs. Comb Honey, 1908.....	Lbs. Extracted Honey, 1908.....
Campbell, Grover—Quincy, Ill.....	48	2000	....
Carpenter, Harry—R. 2, Mt. Carroll, Ill.....	45	1500	....
Cunningham, J. C.—Box 119, Streator, Ill.....	....	....	....
Duby, H. S.—St. Anne, Ill.....	....	....	....
Fosse, E. P.—Marion, Ill.....	47	1200	400
Gamash, James—Waukegan, Ill.....	42	1500	....
Kimmy, Fred L.—Morgan Park, Ill.....	....	....	....
Miller, W. C.—Ottawa, Ill.....	....	....	....
Parker, Solomon—Harrisburg, Ill.....	....	....	....
Ravanaas, Jacob—Rochelle, Ill.....	4	300	....
Runland, Peter—Box 17, Cedar Point, Ill.....	....	....	....
Scott, A. D.—Minonk, Ill.....	....	....	....
Smith, J. Q.—(Report late).....	36	2000	600
Van De Wiel, Aaton—East Dubuque, Ill.....	7	300	40

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